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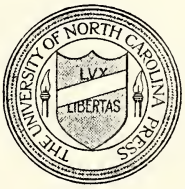
GRADUATE SCHOOL SERIES No. 11

UNIVERSITY OF NORTH CAROLINA RECORD

THE GRADUATE SCHOOL

CATALOGUE 1924-1925



CHAPEL HILL, N. C.
UNIVERSITY OF NORTH CAROLINA PRESS
1925

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CALENDAR

1925

June 7-10 ..... *Sunday to Wednesday.* Commencement.

June 12-July 21 ..... First term of Summer Quarter.

July 22-August 29 ..... Second term of Summer Quarter.

September 15-16 ..... *Tuesday and Wednesday.* Registration for Fall Quarter.

September 17 ..... *Thursday.* Fall Quarter begins.

September 25 ..... *Friday.* General meeting of the Graduate School, 8 P. M.

September 25 ..... *Friday.* Last day for approval of applications for degree of Ph.D. at Commencement of 1926.

October 12 ..... *Monday.* University Day exercises.

November 25 ..... *Wednesday.* Thanksgiving Recess begins (1:00 P. M.).

November 30 ..... *Monday.* Thanksgiving Recess ends (8:30 A. M.).

December 11 ..... *Friday.* Applications for admission to candidacy for Master's degree at Commencement of 1926 must be approved by this date. Last day for approval of thesis subjects for Master's degree at Commencement of 1926.

December 19 ..... *Saturday.* Fall Quarter ends. Christmas Recess begins (1:00 P. M.).

1926

January 4 ..... *Monday.* Registration for Winter Quarter completed.

January 5 ..... *Tuesday.* Winter Quarter begins.

March 19 ..... *Friday.* Winter Quarter ends.

March 20 ..... *Saturday.* Registration for Spring Quarter completed. Spring Quarter begins.

April 3 ..... *Saturday.* Easter Recess begins (1:00 P. M.).

April 12 ..... *Monday.* Easter Recess ends (8:30 A. M.).

May 2 ..... *Saturday.* Last day of period for written examinations for degree of Master of Arts.

May 5 ..... *Wednesday.* Last day for submitting theses for degree of Ph.D.

May 15 ..... *Saturday.* Master's theses must be submitted. Written examinations for the degree of Ph.D. may not be taken after this date.

June 1-4 ..... Final Examinations.

June 6 ..... *Sunday.* Baccalaureate Sermon.

June 8 ..... *Tuesday.* Alumni Day.
Meeting of the Board of Trustees.

June 9 ..... *Wednesday.* Commencement.

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Almonte Charles Howell, Ph.D., Assistant Dean.

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Marcus Cicero Stephens Noble, Professor of Pedagogy.

*George Howe, Ph.D., Professor of the Latin Language and Literature.

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* Absent on leave, 1924-1925.

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STURGIS ELLENO LEAVITT, Ph.D., Professor of Spanish.

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* Absent on leave, 1924-1925.

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* Absent on leave, 1924-1925.

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GREGORY LANSING PAINE, Ph.D., Assistant Professor of English.

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SHIPP GILLESPIE SANDERS, A.M., Assistant Professor of Latin.

*WILEY BRITTON SANDERS, A.M., Assistant Professor of Sociology.

JOEL HOWARD SWARTZ, Ph.D., Assistant Professor of Geology.

* Absent on leave, 1924-1925.

THE GRADUATE SCHOOL

HISTORICAL STATEMENT

The duty of the University not only to teach but to add to the sum of learning is implicit in a clause in the first constitution of North Carolina, adopted in December, 1776, in which it was stated that "all useful learning shall be duly encouraged, and promoted in one or more universities." The charter of the University was granted in 1789, and the cornerstone of the first building, now called old East, was laid October 12, 1793. It was ordered that the first professorship, founded January 10, 1794, was to be held by a teacher who should be "Presiding Professor" of the University with the title of "Professor of Humanity." But from the first, scientific studies were emphasized as well as the humanities, one of the acts of the trustees in December of 1792 being a provision for the purchase of apparatus for experimental physics and for astronomy. At the time of the formal opening, set for January 15, 1795, a library was also established, made up of books donated by residents of the state, the number of volumes in each gift ranging from three to thirty-two, the total reaching nearly a hundred volumes. In 1797 the library received by gifts its first "collection," consisting of 174 volumes of French works. In early times organizations of students made it part of their work to develop the library facilities of the University. The literary societies, founded in 1795, had their own collections of books, and from these beginnings the general library of the University developed.

If the beginnings of such research work as could be carried on only through the aid of proper library facilities were small, the impulse on the scientific side was surprisingly active. As early as 1817 the University published a geological survey of North Carolina that is said to be the first report of the kind in the United States. One of the most distinguished scientists of his time, Elisha Mitchell (1793-1857), was a professor in the University for many years. He published several text-books on geology and mineralogy, and many articles in the *American Journal of Science*. Other members of the faculty during the first seventy-five years of the University's history were authors of text-books and scientific articles in their departments of learning. Laboratory resources were slender; experiments had to be performed by professors and not by the students, but they were performed. After 1875 a very large number of scientific papers were published by twenty-five or more men in the faculty, not including such reports as those issued by the state geologists, who were for many years members of the University faculty. During this period, also, several research societies were established at the University, and their proceedings have been published in the learned journals maintained by the institution.

Beginnings of Graduate Work

Though the University, like other institutions of its kind, had conferred the master of arts degree as an honorary degree for many years, no formal action was taken toward the establishment of graduate study until 1881. President Battle's report in that year called attention to the fact that the University was maintaining special schools of law, medicine, and pharmacy, and that the academic faculty would furnish post-graduate instruction leading to the degrees of master of arts and doctor of philosophy. These degrees would not be conferred "except upon rigid examination on prescribed courses." The first degrees of master of arts and doctor of philosophy in course were granted in 1883. In 1885 the first Graduate Bulletin was issued, a circular stating the requirements for advanced degrees in constitutional law, political economy, classical languages and literature, English language and literature, French, German, mathematics, chemistry, natural philosophy, and in geology, botany, and zoology.

At about the same time (1883) the impulse to further research at the University gained new strength through the establishment of the Elisha Mitchell Society. For the first three years the society published annual volumes of proceedings; afterwards the *Journal* became a quarterly. From the first the society has stressed original research on the part of its professors and advanced students and has been an immense aid to higher scientific work at the University. The Philological Club established an annual record of research, called *Studies in Philology,* in 1906. The *James Sprunt Historical Monographs,* founded in 1899, gave opportunity for the publication of the results of advanced research in history, particularly in the history of North Carolina.

The establishment of these three learned journals in the fields of science, history, and philology, together with the activities of the research clubs which have held monthly meetings now for many years, afforded a great stimulus to investigation at the University and increased recognition of the importance of graduate work. In 1904 the Graduate Department was formally organized as a distinct school of the University and Professor C. Alphonso Smith was appointed as its first dean.

For more than a century the spirit of investigation has been a very real element in the life of the University, constituting a tradition of rich value from which future work is to derive inspiration and authority. In days of limited equipment, remote from great libraries and laboratories, working under conditions that would have quenched a spirit less vital, members of the University were nevertheless impelled to devote themselves to research. No proper estimate either of the history of the University or of its life today can be made without taking into account the sincerity and worth of this achievement.

FIELDS OF RESEARCH

Information concerning the laboratories and scientific equipment, and the library facilities afforded graduate students will be found in connection with the various departmental statements in another place in this catalogue. Some departments have carried on productive work for many years; attention is being given to strengthening these departments in order that there may be no diminution in the quality of investigation, and also to developing other departments so that they may be equipped for directing students who are candidates for the doctorate. Some of the fields in which contributions to learning of recognized value have been made in recent years are as follows:

In Zoology, the principal lines of investigation have been the embryology and regeneration in sponges, coelenterates, and the lower vertebrates, and the systematic zoology of sponges. Numerous monographs, embodying the results of these investigations, have appeared in the zoological journals. Research in Botany has included studies of the flora of the Carolinas, and of the reproduction and physiology of the higher fungi and water-molds. Contributions from the department appear at frequent intervals. In recent years these have been concerned chiefly with fungi, and include two books and numerous monographs of genera. The department of Pharmacology has contributed many monographs on acute and chronic Bright's disease, on the toxicity of anaesthetics and its prevention, and on the influence of age on certain physiological conditions. In Geology, investigations of the movements of sand dunes, the geology of North Carolina, and the relation of Geology to forestry and agriculture, have engaged the attention of teachers and advanced students. In Chemistry, some of the lines of work are the chemistry of dyes and intermediates, physical properties of explosives and intermediates, chemistry of rare earths, utilization of wastes, utilization of local coal, and investigations of analytical methods. In the Department of Mathematics investigations are carried on in the fields of dynamics, projective differential geometry, and differential geometry. The Department of Physics has centered its research on the problem of the structure of matter. It possesses special facilities for work in problems dealing with photo-electric phenomena, spectrum analysis and allied problems in the field of atomic structure.

Engineering research of considerable importance has been carried on in coöperation with the State Highway Commission in connection with studies on moisture control in highway subgrades and on culvert loadings. Studies relating to water purification have been made in the Sanitary Engineering Laboratory and investigation of rainfall and stream flow in North Carolina has been carried on in coöperation with the North Carolina Geological and Economic Survey.

Investigation in the field of Psychology has in the past followed three lines especially: the analysis of cases of psychopathy, human

habit forming in its more complicated phases, and the analysis of technique for measuring animal intelligence. Special encouragement is now also to be given research in problems of personnel. Research studies of both faculty and advanced students in this department have appeared from time to time in leading psychological journals.

The Department of History has for many years been interested in various aspects of Southern history and has published many books and monographs in this field. With the acquisition, recently, of the Weeks Collection, it now possesses unrivalled facilities for further work. In connection with the State Historical Library at Raleigh, which also publishes a series of valuable monographs and books, the department finds opportunity for both research and publication. In the classics much work has been done in the field of syntax and literary history. At present the department is doing productive work in Roman history and epigraphy.

Many books and monographs have been published by members of the Department of English in the fields of philology, literary history, and criticism. Special fields of investigation are the Renaissance, including classical and continental relations; the drama, including Elizabethan, Jacobean and the Post-Restoration periods; and certain aspects of American literature and criticism.

Investigations of problems of immediate regional concern are characteristic of the departments of Economics and Commerce, Rural Social-Economics, and Sociology. Aspects of the labor problem, commercial geography, port and terminal control, transportation, and business cycles, as well as specific matters of importance to southern manufacturing and commerce, form one aspect of the work of these departments. In some of these investigations, other departments coöperate, such as Chemistry, Geology, and Engineering. County and municipal government is studied from one point of view by the Department of History and from a different angle, based on field work as well as books and documents, by the Department of Rural Social-Economics. A very large number of reports on these and similar subjects are made by students and members of the staff each year, and are distributed in printed form. In Sociology, attention is at present directed toward studies of mill villages, the field being investigated from a number of different avenues of approach. Many of these studies are directed or aided by grants made by the Institute for Research in Social Science, which is supported by substantial funds. Ten research assistants besides the departmental staffs are engaged in the investigation of matters affecting social welfare in the South.

Journals of Research

Five journals devoted to research in different fields of learning are maintained by the University. *The Elisha Mitchell Journal,* now in its thirty-ninth volume, has published a very large number of sci-

entific papers, particularly in chemistry, botany, and zoology, and is regarded in this country and abroad as one of the most distinguished journals of its kind. The *James Sprunt Historical Monographs,* now in its seventeenth volume, is a series of original papers chiefly on North Carolina history, contributed by professors and advanced students in the Department of History. *Studies in Philology,* now in its twenty-second volume, originally was limited to the publication of research in philology carried on by members of the language departments at the University. In 1915 it became a quarterly, and now admits to its pages articles by scholars in other universities as well as by members of the University of North Carolina. In April of each year it publishes a series of papers dealing with English literature of the sixteenth and seventeenth centuries, called "Elizabethan Studies," and the journal is now recognized as one of the foremost American journals of philology. *The North Carolina Law Review* and *The Journal of Social Forces* were added to the list of research journals published by the University in 1922, and all these journals are now issued by the University of North Carolina Press, established in 1922. In 1923 the Department of Economics and Commerce, in affiliation with the Secretaries of the North Carolina Chambers of Commerce, began the publication of *North Carolina Commerce and Industry,* as a monthly journal.

The University Press

The journals of research published by the University are issued by the University of North Carolina Press. In addition, the Press publishes books and monographs of research, as well as text books and general literature. The major purpose of the Press is to give the University standing in the field of publishing commensurate with its standing in the field of teaching and investigation. It also provides, through books as well as through the scholarly journals, for the publication of the results of investigations carried on by members of the faculty and advanced students. But it is by no means limited, in accepting manuscripts, to work submitted by members of the University group. Books of distinction by scholars connected with other institutions may be published by it; thus the Press is a valuable aid in the development of that aspect of the University's service which has to do with the advancement of learning.

The Library

The general Library of the University contains one hundred and forty-two thousand volumes, constituting one of the two largest collections in the South. It has been built up with great care, the purpose being to make of it an effective working library, a laboratory for the use of students in those departments in which research must be carried on mainly by means of books, as well as an instrument contributing to general culture. The foundations having been laid, it is expected

that the next few years will see great expansion in those departments of the Library which supply the materials for investigation. During 1923-24 the fund for the purchase of books, journals, and the transactions of learned societies was over $26,750 and about 15,000 volumes, many of them secured abroad, are being added annually. Already valuable special collections are in the possession of the Library, some of which are mentioned in the various departmental statements below. Notable among these are the collection of North Caroliniana, which contains several thousand volumes and constitutes the most complete library of North Carolina history and literature in existence; the chemistry collection, which in number of complete sets of American, English, German, French, and Italian periodicals is unequaled in the South; the rural social science collection; the English collection, which contains the complete publications of most of the important societies interested in the study of the English language and literature, and the recently acquired C. Alphonso Smith library of Southern literature and the Pendleton King collection; and the Elisha Mitchell Scientific Society collection, comprising the exchanges received since 1884 from more than two hundred of the leading scientific societies throughout the world.

There are several departmental libraries, especially for the scientific departments. The Law Library, containing seven thousand volumes, is at present placed in the building occupied by the Law School. It contains material useful to students of history and government. Advanced students also have the privilege of using the valuable manuscripts of the State Historical Commission, at Raleigh, with the State Library, both of which are housed in a beautiful and commodious building. In addition to 1800 volumes in the main library the Economics and Commerce departmental library, located in Saunders Hall, now has a carefully chosen collection of about 1200 volumes. It receives regularly over 100 trade and financial journals, which include the leading publications in this field. Beginning in the autumn of 1924, this departmental library will have available over $3,000 annually for expenditure on books, periodicals, and statistical services.

The University Library receives about fourteen hundred periodicals annually. These include all important publications in this country and abroad. The learned journals which record contemporary research in all the great fields of investigation, such as the sciences, history and economics, philosophy and sociology, classical and modern foreign languages and literatures, and English philology, folk-lore, and literature, are available. The Library is a member of all important philological, bibliographical, and scientific associations, and receives their publications regularly. Bound volumes of most periodicals of permanent worth are available from the beginnings of their publication, constituting a working collection of great value to advanced students. The Library also receives the publications of such organizations as the Smithsonian and the Carnegie Institutions, the Rockefeller

Institute, and the Russell Sage Foundation, and of all universities, including foreign universities, which issue monographs of advanced research. It also enjoys the privilege, through an inter-library loan arrangement, of borrowing from other libraries for the use of graduate students publications which it does not possess.

Graduate students are given, on application, cards of admission to the book stacks, so that they have immediate access to the stores of the Library. There are also in the Library building separate seminar rooms for the departments of history, the classics, romance, Germanic, and English languages and literatures. These seminar rooms are equipped with reference and bibliographical works, with long tables around which the various departmental seminars gather for their meetings, and with individual filing space for advanced students.

SITUATION AND GENERAL ADVANTAGES

The University is situated at Chapel Hill, ten miles from Durham and thirty-eight miles from Raleigh. It may be reached by rail from University Junction, or by one of the automobile lines which maintain frequent schedules from Durham. The site of the University is on a promontory of granite, belonging to the Laurentian system, about three hundred feet above the sandstone formation to the east that was once the bed of a great body of water. It is near the center of the state, midway between the mountains and the sea, with sufficient elevation to insure healthful and pleasant working conditions. The site has always been famed for its beauty. On this promontory the great roads from Petersburg to Pittsboro and from New Bern to Greensboro crossed. At the cross was a chapel of the Church of England, giving to the eminence its name, New Hope Chapel. The name "Chapel Hill" occurs in the report of the trustees, November, 1792, on the choice of a site, and a contemporary account describes the site as follows:

> The seat of the University is on the summit of a very high ridge. . . . The ridge appears to commence about half a mile directly east of the building, where it rises abruptly several hundred feet. This peak is called Point Prospect. The flat country spreads out below like the ocean, giving an immense hemisphere in which the eye seems lost in the extent of space.

This account is equally valid today. The region abounds in hills, covered with magnificent trees, filled with springs and brooks, and with a profusion of mountain flowers. The campus, of about fifty acres, is one of the most beautiful in America. The University owns, contiguous to the campus, five hundred acres of forest lands, partly laid off in walks and drives.

Several endowed lectureships are maintained by the University. The McNair Lectureship, founded in 1906 by the will of John Calvin McNair of the class of 1849, provides for an annual series of lectures by a visiting scholar of distinction, and for the publication of

the lectures in book form. The Weil lectures in American Citizenship, founded by Mr. Sol Weil and Mr. Henry Weil, of Goldsboro, were inaugurated by former President William Howard Taft in 1914-1915.

In addition to these special courses and lectureships, there are in each year many single lectures by well-known men. Some of these are of scholarly nature, others are popular. There are many entertainments of various kinds under the direction of the University. Notable among these are the Sunday evening recitals conducted by the Department of Music, the concerts and recitals by various University musical organizations, and the productions of dramatic work by the Carolina Playmakers. These plays are written by students in English 31, and are produced by them, under the direction of Professor F. H. Koch, at the Playhouse.

In the various departmental clubs students engaged in work in special fields find opportunity for the discussion of problems of mutual interest. There are also meetings of the Graduate Club from time to time for papers and social intercourse.

ORGANIZATION OF THE GRADUATE SCHOOL

Work for advanced degrees in the University of North Carolina is under the supervision of the Graduate Faculty, which consists of those officers of professorial rank who are chiefly interested in the Graduate School, either because they offer courses for graduate students or because of their interest in research. The immediate direction of the Graduate School is in charge of an Administrative Board, of which the Dean is chairman, consisting of ten members of the faculty who represent the three divisions under which the courses offered by the Graduate Faculty are listed.

These divisions, with the departments constituting each, are as follows:

I. *The Division of Languages and Literature*
- The Department of Classics
- The Department of Comparative Literature
- The Department of English
- The Department of German
- The Department of Romance Languages

II. *The Division of Philosophy and of Political and Social Sciences*
- The Department of Economics and Commerce
- The Department of Rural Economics and Sociology
- The Department of Education
- The Department of History and Government
- The Department of Philsoophy
- The Department of Sociology and Public Welfare

III. *The Division of Mathematics and the Sciences*
- The Department of Botany
- The Department of Chemistry
- The Department of Civil Engineering
- The Department of Electrical Engineering
- The Department of Geology
- The Department of Mathematics
- The Department of Physics
- The Department of Psychology
- The Department of Zoology

ADMISSION AND OTHER INFORMATION

Admission

Holders of bachelor's or master's degrees from approved colleges are admitted to the Graduate School upon presentation of their credentials and without examination. If the institution from which the candidate comes is a member of the Association of American Universities or is recognized on the approved list issued by that Association, no special conditions are imposed, except that the undergraduate record must show the creditable completion of an amount of work in the

special field in which the student proposes to continue his work sufficient to constitute an undergraduate major. In case of insufficient preparation, or of transfer to a different department, certain pre-requisite courses may be prescribed which do not carry graduate credit.

Students holding degrees from institutions not included in the membership of the Association of American Universities or its accredited list may be admitted, provisionally, as special students. Such students may qualify as candidates for higher degrees, with the approval of the department and the Administrative Board, on the satisfactory completion of whatever pre-requisite or additional work may be assigned, and after demonstrating, through records in graduate courses taken in one or more quarters of residence in the Graduate School, that they are qualified to do advanced work.

Formal application for admission to candidacy for an advanced degree is required of all regular students. This application may not be filed earlier than the last week of the first quarter of residence. It must be approved, in candidacy for a master's degree, at least two quarters before the degree is conferred, and in the case of the doctorate at least one year in advance. Approval of the application is dependent on the previous work of the student, as shown by his undergraduate record; on the record made in the Graduate School prior to the time when the application is filed; on the certification, by the major department, that the student is qualified to continue advanced work, with a program of work prepared in satisfaction of the requirements for the degree; on the presentation of certificates of proficiency in the foreign languages required for the degree; and on the removal of any special conditions imposed by the department or by the Administrative Board.

It should be noted that this distinction between admission to the Graduate School and admission to candidacy for a degree does not necessarily involve any extension of the time required for the degree. Properly qualified students will register at once, with the approval of the departments interested, for such advanced courses as they wish to take, and all advanced courses completed according to the rules for graduate work will be credited toward the degree.

Fees and Expenses

The tuition and incidental fees in the Graduate School are thirty-two dollars each quarter.

A certain number of University scholarships carrying free tuition in the Graduate School are available. Applications for these scholarships should be filed in the office of the Dean not later than April 1st.

Fellowships and Other Aids

Twenty-four University Fellowships, each with a stipend of $500, are available to graduate students. These fellowships carry free tuition (not including laboratory fees), and are payable in nine monthly

installments, beginning in October of the year for which they are awarded. Holders of these fellowships are expected to perform certain limited services as teachers or laboratory assistants in the department to which they are assigned. This department must be the major department of graduate study, and each holder of a fellowship will be required to pursue advanced courses in the department during his term as fellow.

Fellowships are awarded only to men who present satisfactory records as students and who give promise of being able to carry on advanced work with distinction. Teaching experience is desirable, but is not required.

Fellows are not permitted to hold any other office or position connected with the University, and they may not occupy any position outside the University during the term of the fellowship, or engage in any work for pay without the written permission of the Dean.

Correspondence in regard to the teaching fellowships may be addressed to the Dean or to the head of the department in which the candidate proposes to do his major work. A special form of application, to be secured from the Dean's office, must be filed before March 15th. Elections to fellowships will be made by the Administrative Board of the Graduate School, on nomination by the department to which the fellowship is to be assigned. Since the University is a member of the Association of American Universities, the rules of that Association in regard to fellowships are followed.

Ten Research Assistantships, each paying $1,500, have been established in sociology and related fields, in connection with the Institute for Social Research. These appointments carry free tuition, and certain additional expense allowances are made, particularly for field work. Candidates must be able to qualify for admission to the Graduate School, must become candidates for higher degrees, and must, in addition, have had at least one year of approved graduate work before appointment. Appointments are for one year, but may be renewed if the record justifies such action.

Fifteen University Scholarships are available on the same general terms as those governing the fellowships. These Scholarships carry remission of tuition fees, and require no services. They are open to candidates in any department represented in the Graduate School.

A limited number of appointments as Teaching Assistants are also available. The stipend ranges from $500 to $800, and tuition fees are remitted. They require approximately half-time teaching, the remainder of the time being devoted to advanced study in the department in which the appointment is held.

Rooms and Board

Graduate students may apply for rooms in University dormitories on the terms named in the general catalogue. Rooms are also available in town. Board costs from $21.50 to $30.00 per month.

The University Year

Four terms, or quarters, of approximately eleven weeks each, constitute the regular University year. In all of these terms graduate courses are offered, and students may register at the beginning of any term. The summer quarter is a component part of the University year, and the rules for admission and the requirements for advanced degrees are the same as in other quarters. The master's degree may ordinarily be attained in three summer quarters or an equivalent.

The unit of work is the course, by which is meant, as a rule, a class meeting five times a week. Half courses are also offered. In some courses open only to graduate students, such as the seminars and other research courses, the formal class exercises are modified. But all such work is credited in terms of courses and half courses.

Students are ordinarily expected to register for three courses. But two half courses may be substituted for a full course. Not more than three courses, or fifteen hours of class attendance, will be permitted. Students of more than one year's standing, candidates for the doctor's degree, are permitted greater latitude with reference to courses for which formal registration is required. Such considerations as the amount of time devoted to research, to work on the doctoral dissertation, and the like, weigh in the estimate of what constitutes full work. But in all such cases detailed reports by the department are required before residence credit is given.

Only work announced as open for graduate credit in this bulletin or the bulletin of the summer school session may be counted toward the higher degrees.

Work done *in absentia* will not be counted for graduate credit, except that in certain cases approved by the department and by the Administrative Board part of the work on the thesis for a higher degree may be done elsewhere, and except, further, that part of the work required for the degree of doctor of philosophy may, on recommendation of the major department and with the approval of the Administrative Board, be done at another university. But all such work, even when credited, is subject to examination at the finals required for the degree.

General Regulations

The following regulations of the Graduate Faculty should be observed:

1. Graduate students are subject to the same rules regarding attendance upon classes, faithfulness to assigned tasks, examinations and credit as students in other departments of the University. But graduate work pre-supposes a greater amount of time for research in the library or the laboratory, and the student, being more mature, is thrown more upon his own responsibility. For these reasons excessive registration is not permitted. The whole idea of graduate work is comprised in a more intense specialization and therefore more complete investigation than is necessary or wise in undergraduate instruction.

2. Grades for each course completed are reported to the Dean and to the Registrar. These grades are as follows:

"A," which represents work of the highest distincton.

"B," which represents work of high distinction.

"C," which represents work that, while satisfactory, is of fair grade only.

No work falling below the standard represented by the grade of "C" is counted for graduate credit. At least half the work credited for any one year of residence must be of grade "B," or better. If, in the judgment of the Administrative Board, the quality of the work done by any student falls below the standard expected of graduate students, the registration of such a student will be cancelled.

3. Each graduate student works under the direction of a special committee which consists usually of the head of the major department, or of some member of the staff of that department under whom the candidate is doing special work, who serves as chairman, and the other instructors with whom the candidate is registered. The program and plan of study proposed by each graduate student will be approved by the chairman, and by the Dean.

The effort is made to arouse in the mind of the student a sense that graduate work is not a matter solely of attendance on classes and passing examinations on courses. He must see his work as a whole, and in its relation to a department of learning, not as a set of isolated units. In the more intimate personal relations to his advisory committee, too, he finds values impossible in the undergraduate course. He is a member of a small group; instruction is more nearly personal; he becomes acquainted with the method as well as with the content of learning.

THE GRADUATE DEGREES

The degrees under the supervision of the Graduate Faculty are Master of Arts (A.M.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.).

1. THE DEGREE OF MASTER OF ARTS

Prerequisites

For the degree of master of arts the general prerequisite is the completion of a course leading to the degree of bachelor of arts in a college or university of standard grade. This course should have included special study in the department in which the graduate degree is sought sufficient in extent to constitute, in the judgment of the department, a proper preparation for the advanced work expected of candidates for the degree. If the undergraduate preparation has been insufficient, departments may prescribe certain preliminary courses before recommending a student for admission to candidacy for a higher degree. Such courses do not count for graduate credit, but become requirements for the degree in addition to the nine courses specified below.

Registration

Nine full courses of advanced character are required for the master's degree. To complete these courses, at least three full quarters of residence are required. No course will be counted for the degree unless it appears in this bulletin or is approved by the Administrative Board for inclusion in the next catalogue of the Graduate School. Such courses are of two classes only: those primarily for graduates, and those open to graduates and advanced undergraduates. Courses of this second class are ordinarily open only to students of at least senior standing.

The Major

Of the nine courses offered by candidates for the degree of master of arts, six must be from one department, recognized as the major. But with the approval of the special advisory committee and of the Administrative Board closely allied work in another department, where the relationship of this work to the special plan of study proposed by the candidate is clear, may be accepted as a part of the major. More than six courses in one department may be counted under special conditions approved by the Administrative Board.

The Minor

The remaining three courses, constituting the minor, are to be chosen from a department different from the major. But the relation of the minor to the major must be such as to constitute for the entire

program of the candidate a clearly defined relationship. Ordinarily, therefore, the minor must be a department in the same division as the major, although this is not necessary if the requirement for a unified program of work is met. For a tabular view of these divisions and the departments composing them, see the section on Organization, above. In certain cases the Administrative Board will permit the minor to be in the same department as the major.

Other Requirements

The method of securing admission to candidacy for the degree and the relation of the candidate to his advisory committee are explained above under the heading of General Regulations.

Ordinarily a reading knowledge of at least one modern foreign language is expected of candidates for the master's degree. This knowledge will be tested by a special examination given by the language department, and must be certified to before the student is admitted to candidacy for the degree. But the language requirement may be waived if the major department regards it as unnecessary in a special case.

The Master's Thesis

Besides the completion of advanced courses that constitute a unified plan of study, the fitness of the student for the degree is tested in two ways: by a thesis and by oral and written final examinations. The thesis tests the candidate's knowledge of the method of investigation and his ability to make use of the knowledge he has acquired. The examinations test his knowledge of his special field by directing attention to the field as a whole, as contrasted with the course, which deals with a limited portion of the field.

The subject chosen for the thesis must be approved by the advisory committee and reported to the Administrative Board by the end of the first quarter of residence. No change in subject, or deferring of the time of approval, will be permitted unless at least two quarters of residence intervene between the approval of the subject and the conferring of the degree, except that, with the permission of the Administrative Board, the thesis may be completed by a student not in residence who has satisfied the requirements as to courses. For a statement of the conditions under which such permission may be secured, see above under the heading General Regulations.

The subject of the thesis must be connected with the major, must be connected with a course or courses pursued in residence, and may count not to exceed two courses. No thesis will be approved if it is not written in correct English or if it is not presented in scholarly form. It must show independent thought both in its recognition of a clearly defined problem and its method of treatment. It must show the sources of information and a knowledge of the bibliography of the special field.

The thesis must be presented at least one month before the commencement at which the degree is to be conferred, and in duplicate. The first copy must be on paper of prescribed size and quality, and must observe the special rules of form established by the Administrative Board. A copy of the regulations for the form of theses may be had on application to the Dean's office. An abstract must be submitted with the thesis; if the thesis is approved and the degree conferred, this abstract will be printed in a special bulletin of the Graduate School annually devoted to reports of research.

Examinations

Candidates for the master's degree are required to pass all examinations in courses at the end of each quarter of residence, with the grades specified under the General Regulations above. In addition two special examinations are required. The first of these is a written examination on the field of the major, is to be set by the student's advisory committee, and must be taken not earlier than the first month of the last quarter of residence. The second examination is oral, covering the entire work of the candidate, both major and minor, with special stress on the thesis and one other topic to be selected by the candidate. The examination is to be conducted by a special committee appointed by the Dean, consisting as a rule of the student's adviser as chairman and at least two other representatives of the major and minor subjects. Formal notice of the time and place for holding this oral examination shall be sent to all officers of professorial rank in the major and minor departments and to the members of the Administrative Board, and persons so notified may attend the examinations if they so desire.

While these examinations are not as rigid as those required for the doctor's degree, they must satisfy the committee which has charge of them that the candidate possesses such knowledge of his major and minor field as may reasonably be expected, that he can draw upon his knowledge with promptness and accuracy, and that his thinking is not limited to the separate units represented by his courses. Ability to draw conclusions and to express ideas with clearness and precision is a necessary element. No mere memorizing of facts will serve.

The special committees on theses and on the examinations will report their recommendations to the Dean at least one week before the end of the last quarter of residence. If the candidate's record in these respects is satisfactory, and if he has complied with all of the requirements for the degree, the Dean will report to the faculty for approval and recommendation to the board of trustees.

Commencement

Degrees are conferred only at the annual commencement exercises of the University in June. But a candidate may complete his required work, including examination and submission and acceptance of

the thesis, at the end of any quarter or term. Attendance at the commencement at which the degree is conferred is required unless the candidate is specially excused by the Dean and the President of the University.

SUMMARY OF THE PROVINCE OF THE DEGREE OF MASTER OF ARTS

The rules and conditions governing the degree of master of arts set forth in the preceding paragraphs have certain well defined aims. It is not a research degree in the sense that the candidate is required to make a contribution to knowledge. It is, however, a research degree so far as the individual student is concerned, since he is engaged in a more detailed study of a single field of learning than was possible during his undergraduate course and this detailed study culminates in work upon a single problem, the subject of his thesis, for the solution of which he is required to give attention to the method of advanced study. He is concerned with the materials of learning, and with the organization and interpretation of these materials. The purpose of his study is still liberal, as in the undergraduate course, but he seeks freedom, not in brief and often unrelated sections taken from the entire field of learning, but in more intensive study of a single province. To this end, of securing freedom and liberal training along with the greater confidence that is to be gained only through mastery of a sharply defined field, the greatest possible latitude is permitted in study plans. The object is not to train specialists but to gain a relative mastery of one of the liberal arts. Hence the correlation of courses, the oral and written examinations, and the thesis. Since there are many possible combinations of courses, and since the method of administration provides for personal supervision of a student's work by a special committee, the training for the degree is a useful and needed supplement to the undergraduate course.

The work outlined above can be done in one year by students whose preparation has been good and who devote themselves as fully to this more specialized work as they would in a professional school. But two years are better than one, and will yield correspondingly greater results. Especially is this true for young men and women who desire to prepare for high school and college teaching, but who do not wish to become investigators or specialists. Part of their time may be spent in a study of courses and programs, and of methods of instruction applicable to their special subjects. Two years of study of this sort, if put on the right foundation, will give rich results, and for some reasons such a course is more useful than the course which leads to the doctorate. The Administrative Board will gladly plan work for the degree of master of arts on a two-year basis, and persons who complete such a course with distinction will be specially recommended for teaching positions of the better grade.

2. THE DEGREE OF MASTER OF SCIENCE

Prerequisites

The subjects of major study may be chemistry, civil engineering, commerce, electrical engineering, or geology, and the prerequisite courses are the courses leading to the following degrees: B.S. in Chemistry, B.S. in Civil Engineering, B.S. in Commerce, B.S. in Electrical Engineering, and B.S. in Geology. Before becoming a candidate for the advanced degree the student must complete the courses leading to the corresponding bachelor's degree as outlined in the general catalogue.

Courses Leading to the Degree of Master of Science

I. Master of Science in Chemistry

One of the groups:

Chemistry 117-118-119
Chemistry 127-128-129
Chemistry 147-148-149
Chemistry 177-178-179
Chemistry 197-198-199

Two of the groups:

Chemistry 114-115-116
Chemistry 124-125-126
Chemistry 144-145-146
Chemistry 174-175-176
Chemistry 194-195-196

Three approved courses from one of the following departments:

Electrical Engineering
Geology
Mathematics
Physics
Civil Engineering

II. Master of Science in Civil Engineering

One of these groups to be selected as a major.

Civil Engineering 100a-100b-100c
Civil Engineering 103a-103b-103c
Civil Engineering 106a-106b-106c
Civil Engineering 107a-107b-107c

Approved courses in the following departments; the arrangement and number of courses to be decided upon after conference with the Department of Civil Engineering:

Mechanical and Electrical Engineering
Chemistry
Geology
Mathematics
Physics

III. Master of Science in Commerce

Courses to be arranged in consultation with the head of the Department of Commerce.

IV. Master of Science in Electrical Engineering

Electrical Engineering 110a-b-c
Electrical Engineering 115a-b-c

Three approved courses from one of the following departments:
Civil Engineering
Chemistry
Geology
Physics

V. MASTER OF SCIENCE IN GEOLOGY

Geology 104-105-106
Geology 107-108-109

Three approved courses from one of the following departments:
Chemistry
Civil Engineering
Botany and Zoology

VI. MASTER OF SCIENCE

Students holding the degree of B.S. from a standard college may proceed to the degree of M.S. by fulfilling the following requirements: Six approved courses in some science (the major); three courses in an allied department (the minor).

Other Requirements

The requirements regarding modern language, thesis, examinations, committee, residence, and conferring of degrees are the same as for the degree of master of arts.

3. THE DEGREE OF DOCTOR OF PHILOSOPHY

The degree of doctor of philosophy is conferred only upon those who have completed, with high distinction, a period of extended study and investigation in a single field of learning during which they have gained control of the materials in the chosen field, have mastered the method of advanced study, and have illustrated this method through a dissertation, the result of independent research, which adds to the sum of human knowledge or presents results that have enduring value. Neither the accumulation of facts, however great in amount, nor the completion of advanced courses, however numerous, can be substituted for this power of independent investigation and the proofs of its possession. While it is true that a well prepared student of good ability may secure the degree upon the completion of three years' study, it should be understood that this time requirement is wholly secondary to other considerations that will be explained in the following paragraphs.

Admission and Registration

The rules for admission to courses leading to the degree of doctor of philosophy and for registration for courses in the first year of residence are the same as those stated above in the section on the degree of master of arts. The work for the first year is substantially the same as that provided for candidates for the master's degree, and while it is not necessary to take the master's degree, it is usually advisable. The provision for choice of major and minor subjects, and for the direction of the student's work by a special committee, are as already set forth under the requirements for the master's degree.

Second and Third Years

Not later than the beginning of the second year's work a tentative program of study must be approved by the special committee and by the Administrative Board. During the second year this program may consist chiefly of advanced courses in both major and minor fields. The minor should be completed during this year, and work on the dissertation should be begun.

Each candidate must pass examinations in French and German, given under the supervision of the foreign language departments. These examinations will include one general elementary passage of French and of German, and at least two other passages in each language chosen from the field of specialization. The foreign language departments will set two dates each year, one about November 15 and the other about February 15, for these examinations.

Not earlier than the end of the second year, and at least one academic year prior to the commencement at which the degree is expected, a preliminary oral examination shall be given by the special advisory committee in charge of the candidate's work plus all members of the staff of the major and minor departments. This examination shall cover all the work of the two years. As a rule, no student will be admitted to candidacy for the doctorate until this examination has been passed.

The work of the third year requires no special registration in courses, though the candidate will find it advisable to attend certain courses as a lecture student. The major portion of the time is to be spent upon the dissertation or upon special laboratory or research work, and in preparation for the final examinations.

The Dissertation

The subject chosen for the dissertation must be approved by the committee and by the Administrative Board not later than the time of the preliminary examinations. But work upon it, such as preliminary bibliographies, and the collection of material, should be begun earlier than this. The dissertation is the fruit of thorough investigation of a definite problem and finds its value in the scholarly and workmanlike manner in which it is presented, in its contribution to learning, and in the mental power which it displays.

The dissertation must be presented, in three typewritten copies, at least six weeks before the commencement at which the candidate expects his degree. It must comply with the rules for form of thesis prescribed by the Administrative Board, and abstracts must be supplied as under the rules for masters' thesis. A thesis committee, appointed by the Dean, shall examine the dissertation, and no dissertation shall be accepted unless it secures the unanimous vote of the committee.

Publication of the dissertation, except by abstract in the Graduate Bulletin, is not required. But the various journals published by the University afford opportunity for publication at least in part, and such publication is expected.

The Examinations

Reference has already been made to the preliminary examination required for admission to candidacy for the doctorate.

At least four weeks before the end of the period of study a written examination in the major subject must be passed by the candidate. This examination, which is conducted under the direction of the major department, may be limited to the courses taken by the candidate, but as a rule it is based upon the entire field of knowledge represented by the major.

The final oral examination must take place at least one week before the commencement at which the student is a candidate for the degree. The committee to have charge of this examination is appointed by the Dean, and includes the head of the major department or his representative as chairman, with other members of the major and minor departments as assistants. The date and place of the examination shall be publicly announced, and the examination shall be open to any member of the graduate faculty.

Candidates whose record in courses, examinations, and dissertation is satisfactory will be reported by the Dean to the faculty for recommendation to the board of trustees.

Commencement

Attendance at the commencement at which the degree is conferred is required, unless the candidate is excused by the Dean and the President of the University.

COURSES OF INSTRUCTION

Only those members of the various departmental staffs who are concerned in graduate instruction are included in the following statements.

DEPARTMENT OF BOTANY

William Chambers Coker, Professor.
Henry Roland Totten, Assistant Professor.

For students well prepared in botany, opportunities are open in teaching, in the scientific work of the United States government and of state institutions, in special work in various phases of the subject, such as plant breeding, with independent institutions. A master's degree in botany should prepare the student for positions in any of these fields. A doctor's degree is open to those who have the opportunity to prepare themselves for the more responsible positions. One teaching fellowship of $500 and two assistantships are open to students prepared to fill them.

Laboratory Equipment

The botanical laboratories are in a well-equipped modern building with all the necessary apparatus for the work that is carried on.

The laboratory facilities are fully up to the standard of similar institutions, and funds are available for the purchase of any additional laboratory apparatus needed by research students in special subjects. The department is not prepared to carry on physiological research on the higher plants as the University has never provided suitable conservatories and apparatus for this field.

The department is prepared to guide students in research, particularly along the following lines: taxonomy and morphology of the lower plants, excluding bacteria; morphology and cytology of any group of plants except bacteria; and the constitution and distribution of the flora of North Carolina.

The library of the department has in the last few years been greatly augmented along the lines of standard classical works of prime importance in research, particularly in the field of mycology. In this field the department library is more complete than that of any other southern institution. Particular attention has also been given to American publications in botany of historical importance. It contains a majority of the important botanical journals as well as thousands of valuable books and reprints. The Arboretum is of much value to students in the study of special problems, and the surrounding country is particularly rich in a great variety of interesting plant life.

The candidate for the degree of master of arts is at first given work requiring individual initiative, and a part of his work during the course consists of original work, with the preparation of his results in the form of a thesis suitable for publication.

Candidates for the degree of doctor of philosophy give most of their attention to the preparation of an advanced thesis and must show ability to handle their subject in an original manner. A part of their work may be done during the summer at biological stations or other institutions, and visits to other libraries may be necessitated for the study of special literature.

Courses for Graduates and Advanced Undergraduates

4-5-6. Special Morphology of the Fungi with special attention to plant diseases, the culture of the lower fungi, and the identification of mushrooms.

Lectures with laboratory and field work. Prerequisite, Botany 1. *Triple course. Fall, winter, and spring quarters.* (Credit will be given for any quarter.) Professors Coker and Totten. These courses may be continued under the same numbers for more than one year as the subject advances, credit being given for each repetition. Laboratory fee $4.00 a quarter.

8 hf. History of Botany. Lectures, readings, and reports. Prerequisite, two courses in botany. *Winter quarter.* Professor Coker.

Courses for Graduates

107-108-109. Plant Morphology. Advanced work in the embryology and anatomy of plants. The student is required to collect and prepare material for the microscopic study of special problems. Theses. *Triple course. Fall, winter, and spring quarters.* Professor Coker. These courses may be continued under the same number for more than one year as the subject advances, credit being given for each repetition. Laboratory fee, $4.00 a quarter.

110-111-112. Original work, with theses, under the direction of the instructor. Professor Coker. This course may cover most of the work of the student for several years, credit being given each year in accordance with the work done. Laboratory fee, $4.00 a quarter.

DEPARTMENT OF CHEMISTRY

JAMES MUNSIE BELL, FRANCIS PRESTON VENABLE, ALVIN SAWYER WHEELER, Professors.

JAMES TALMADGE DOBBINS, FRANK CARL VILBRANDT, Associate Professors.

FLOYD HARRIS EDMISTER, Assistant Professor.

The student who wishes to make chemistry his profession may later wish to enter one of the following branches of the profession: (1) *Teaching in Schools, Colleges, and Universities.* At present the work leading to the degree of B.S. in Chemistry fulfills the requirements of the state, but there is a strong tendency towards the requirement of the master's degree for the highest grade of teacher's certificate. For teachers in colleges and universities the work leading to the Ph.D. degree should be taken. (2) *For industrial chemists, consulting chemists and chemical experts,* at least the M.S. degree and preferably the Ph.D. should be sought. The courses leading to these degrees provide also thorough training in the allied sciences, physics, geology, mathematics and engineering, thus enabling the student to become an expert adviser for a corporation in developing and supervising its manufacturing plants, or to act as a consulting chemist in special problems. (3) *The National and State Scientific Bureaus* employ large numbers of chemists and are constantly appealing to the universities for nominations to fill new positions. The better of these positions require candidates with the Ph.D. degree. (4) *Research Chemists* are employed by many private manufacturing establishments and by many semi-public research organizations which maintain thoroughly equipped laboratories. In these, investigations are pursued, having for their end the improvement of old methods and the invention of new methods. The number of such laboratories is rapidly increasing and there is now a great demand for highly trained chemists to take charge of these laboratories and to direct their work. The proper training for such a career is the work leading to the Ph.D. degree.

The work of a graduate student who specializes in chemistry consists in large measure in the solution of some research problem. The student learns at first hand the point of view and the methods of research chemists. At the present time a number of lines of investigation are being actively followed in this laboratory. In inorganic chemistry research is in progress on the compounds of zirconium. In organic chemistry cymene, a by-product of wood-pulp manufacture is being investigated, many new dyes having already been

obtained. Work is also progressing on juglone, a dye intermediate; on gossypol, the yellow poisonous dye in cotton seed; on naphthazarine, a dye intermediate, and on certain condensation reactions. In physical chemistry the physical constants of the nitrotoluenes are being studied at the request of the National Research Council. Also certain of the compounds of mercury, copper, lead and arsenic are under investigation. In industrial chemistry several chemical plant problems are being studied at the request of the industries. There is being carried on research on problems connected with the refining of petroleum and its products, with the by-producting of coals, and with the substitution of sodium for potassium compounds, this last at the request of the National Research Council. The results of all these researches appear as the work proceeds and during recent years numerous articles have been published in the American journals reporting progress in these investigations.

The research experience gained in the graduate years is of inestimable value not only to the student himself but also to the educational institution or to the industry with which he later becomes associated. This is amply verified from the records of the positions held by the graduates of the University. Many have gone into the iron and steel industry, a number into the dye industry either as supervisors of plant operation or as directors of chemical research. Others have gone into other industries, such as tobacco, corn products, general chemicals, and fertilizers. Several alumni are now in charge of large research projects at public and semi-public institutions.

The Department of chemistry occupies a building constructed in 1905 and located in the eastern portion of the campus. There are two stories and a full basement. It contains forty rooms, among which are three lecture rooms, eight general laboratories, four private laboratories, four research laboratories, four laboratories devoted to special work, a fire-proof room and a constant temperature room. By the fall of 1925 the new Venable Hall of Chemistry named in honor of Dr. Francis Preston Venable will be completed and will be occupied by the Department of Chemistry. This building has about 55,000 square feet of floor space, mostly of modern factory construction, which with sky-light illumination is admirably adapted for laboratory use. The structure is fireproof, and contains a complete modern ventilating system. About thirty small individual research laboratories have been provided for the faculty and for graduate students. Each of these rooms is furnished with hot and cold water, live steam, gas air under pressure, and electric current for experimental purposes. So far as possible the laboratory equipment is of fire-proof construction, the laboratory table tops, hoods, and sinks being constructed of alberene stone or asbestos lumber. The Library of the Department is to occupy a large room in the main building and connects with a seminar room where small advanced classes will be held.

The Chemical Library and Reading Room contains many complete sets of the most important chemical periodicals, many books of reference, and a unique collection of books of historical value and interest, amounting altogether to more than 3,000 volumes. An endowment of $5,000, the generous gift of Mildred Cameron Shepard in memory of her father, Paul Cameron, supplements the general fund for the maintenance of the library.

Fellowships and Scholarships

Ledoux Fellowship. This fellowship, awarded annually, is the gift of Dr. A. R. Ledoux of New York. The amount of the fellowship is $300.

Attention is also called to the teaching fellowships which are open to graduate students who wish to defray part of their expenses by teaching elementary classes.

Some assistantships are also open to graduate students. The duties of the assistants are the preparation for and supervision of laboratory classes in the larger elementary courses and also the examination of laboratory reports.

Applications for these positions should be directed to the Department of Chemistry not later than March 15 of each year.

Graduate Degrees in Chemistry

The course leading to the degree of M.S. in Chemistry is open to students who have graduated with the degree of B.S. in Chemistry at the University, and to students who have completed the equivalent of the courses as prescribed by the University. The course leading to the degree of M.S. in Chemistry is prescribed by the Graduate faculty and consists of a research in one of the branches, inorganic, organic, analytical, industrial, or physical chemistry, of two seminar courses of three quarters each in two of those branches, and of one course of three quarters to be selected from five departments: Physics, Geology, Electrical Engineering, Civil Engineering and Mathematics. The general regulations of the Graduate School govern the work for the Ph.D. degree.

Courses of Instruction

For candidates for advanced degrees with a major in some other department and with a minor in chemistry, the following courses only are open: Candidates for the A.M. degree with a major in chemistry must have elected chemistry as a major in the junior and senior years. Prerequisites are therefore: Chemistry 1, 2, 31, 41, 42, 13, 61, 62.

Courses for Graduates and Advanced Undergraduates

11. Industrial Chemistry. The methods and economics of the inorganic chemical industries: lectures and laboratory work. *Fall quarter.* Professor Vilbrandt.

12. Industrial Chemistry. The methods and economics of the organic chemical industries: lectures and laboratory work. *Winter quarter.* Professor Vilbrandt.

13. Chemistry of Foods. Digestion process; and the composition, preservation, adulteration and industrial production of foods. *Spring quarter.* Professor Vilbrandt.

18.hf. History of Chemistry with discussion of the development of chemical theories. *Spring quarter.* Professor Venable.

45. Technical Quantitative Analysis. Water, oil, fuel and gas analysis. *Fall quarter.* Professor Vilbrandt.

46. Technical Quantitative Analysis. Iron, steel, fertilizer, and miscellaneous materials. *Winter quarter.* Professor Vilbrandt.

62. Organic Chemistry. Carbocyclic Series. *Fall quarter.* Professor Wheeler.

63. Identification of Pure Organic Compounds. *Spring quarter.* Professor Wheeler.

64. Chemistry of Dyes. Lectures and laboratory work. *Winter quarter.* Professor Wheeler.

81. Physical Chemistry. Study of the properties of solids, liquids and gases, and of their relation to chemical constitution. *Winter quarter.* Professor Bell.

82. Physical Chemistry. The theory of solutions. *Spring quarter.* Professor Bell.

83. Physical Chemistry. The methods of physical chemistry as applied to industrial processes. *Fall quarter.* Professor Bell.

84. Physical Chemistry. Electrochemistry. *Spring quarter.* Professor Bell.

Courses for Graduates

114-115-116.hf. Advanced Technical Chemistry. Seminary course: readings and discussions of recent advances in technical chemistry. This course extends throughout the year. Professor Vilbrandt.

117-118-119. Research in Industrial Chemistry. The statements made in regard to courses 127, 128, 129 apply also to this course. Professor Vilbrandt.

124-125-126.hf. Advanced Inorganic Chemistry. Seminar course: readings and discussions of recent advances in inorganic chemistry. This course extends throughout the year. Professor Edmister.

127-128-129. Research in Inorganic Chemistry. Laboratory work with frequent conference with the professor and reference to the literature relating to the subject of research. The subject of research must be assigned or approved by the professor. This course extends throughout the year. Laboratory fee, $10.00 a quarter. Professor Edminster.

144-145-146.hf. Advanced Analytical Chemistry. Seminar course: readings and discussion of special chapters in analytical chemistry. This course extends throughout the year. Professor Dobbins.

147-148-149. Research in Analytical Chemistry. The statements made in regard to courses 127-128-129 apply also to this course. Professor Dobbins.

174-175-176.hf. Advanced Organic Chemistry. Seminar course: reading and discussion of special chapters in organic chemistry. This course extends throughout the year. Professor Wheeler.

177-178-179. Research in Organic Chemistry. The statements made in regard to courses 127, 128, 129 apply also to this course. Professor Wheeler.

194-195-196.hf. Advanced Physical Chemistry. Seminar course: readings and discussions of recent advances in physical chemistry. This course extends throughout the year. Professor Bell.

197-198-199. Research in Physical Chemistry. The statements made in regard to Course 127-128-129 apply also to this course. Professor Bell.

DEPARTMENT OF CIVIL ENGINEERING

Gustave Maurice Braune, Thomas Felix Hickerson, Thorndike Saville, Professors.
Harold Frederick Janda, Associate Professor.

The profession of civil engineering offers rich opportunities to men who have the power to apply their technical knowledge and experience to the best advantage. Graduate technical training based upon a broad scientific and cultural foundation becomes a valuable asset to those who would fill the places of leadership in the profession and the affairs of life.

Instruction is given by means of lectures, recitations, and seminars in connection with appropriate work in the laboratory, drawing room and field. To this end the civil engineering laboratories in Phillips Hall are well equipped. A library of text and reference books in Civil Engineering, as well as files of the leading journals, is at the disposal of all the students.

Courses for Graduates and Advanced Undergraduates

14a-b-c. Structures. Graphical and analytical determination of stresses occurring in engineering structures, such as roofs, bridges, retaining walls, etc. The design of simple structures in steel and timber. Professor Braune.

24a-b-c. Reinforced Concrete. The development of the principles involved in the design of slabs, beams, girders, columns, and simple structures. Professor Hickerson.

34a-b-c. Hydraulic and Sanitary Engineering. Design, construction and operation of water supply and sewerage systems as applied to municipalities and rural communities. Professor Saville.

44a-b-c. Highway Engineering. A detailed study of highway locations, foundations, drainage, width and kind of roads; characteristics of various road materials; highway administration, legislation and organization. Professor Janda.

15-25-35-45a-b-c. Engineering Design. Application of principles in courses 14, 24, 34, 44, to specific problems in the structural design of roofs, bridges, reinforced concrete, and masonry structures; general lay-out and design of simple projects for water works and sewerage; physical testing of road materials. Professors Braune, Hickerson, Janda, and Saville.

Courses for Graduates

100a-b-c. Hydraulic and Sanitary Engineering. The study and investigation of special problems relating to hydraulics, water power, and sanitary engineering. Professor Saville.

103a-b-c. Structural Engineering. Computation of stresses of statically indeterminate structures. Lectures and design-problems in the drafting room. Professors Braune and Hickerson.

106a-b-c. Research in Highway Engineering. Investigation of materials in highway engineering through coöperation with the Highway Commission. The research fellow will spend part time at the University and part time in the field with the Highway Commission. Fellowships will be awarded to worthy graduate students who can present the proper qualifications. Professor Janda.

107a-b-c. Detailed laboratory study of highway materials. The students will be given problems for investigation that are being constantly suggested in the scientific construction and betterment of highways. Professor Janda.

DEPARTMENT OF CLASSICAL LANGUAGES AND LITERATURES

*GEORGE HOWE, WILLIAM STANLEY BERNARD, Professors.

GUSTAVE ADOLPHUS HARRER, RUSKIN RAYMOND ROSBOROUGH, Associate Professors.

SHIPP GILLESPIE SANDERS, Assistant Professor.

Graduate work in the Department of Classical Languages and Literatures is designed to meet the needs of three classes of students: (1) those who intend by intensive study and research to specialize in either Latin or Greek; (2) those who are teachers (or are preparing to teach) in the secondary schools, public or private; (3) those who desire a knowledge of the classic languages or literatures for cultural purposes.

1. Intensive study and research are made available through advanced lecture courses, seminars, a well equipped library and facilities for exchange of books with libraries of other large universities. Also for each language a fund is provided for the purchase of books for specialized advanced study. The department has its own seminar room in the central library, which is well equipped with the standard books or reference and complete sets of journals. The list of journals includes *The Classical Journal, The Classical Weekly, Classical Philology, American Journal of Philology, American Journal of*

* Absent on leave, 1924-1925.

Archaeology, Journal of Hellenic Studies, Journal of Roman Studies, The Classical Review, The Year's Work in Classical Studies, Hermes, Glotta, Philologische Wochenschrift, Jahresbericht der Klassischen Altertumswissenshaft, Philologus, Rheinisches Museum.

2. In view of the constantly increasing demand for well trained teachers in secondary schools, courses are offered designed in content and method to meet this demand. Such prospective teachers should apply for the master's degree in Latin or their major subject. One course only in Greek, Greek 14 (Comparative Literature 14) is required for such students. This course needs no knowledge of the Greek language.

3. The department aims also to coöperate with the other language departments in the University in making available for culture and comparative work in literature the great literatures of the world. To this end courses in Greek and Latin literature are offered, which do not require ability to read either language in the original. Such courses are designed to place emphasis on aspects of the Greek and Latin genius; forms of literature created and perpetuated, and their permanent contribution to western civilization. Such courses may be elected as part of a major for the degree of Master of Arts in the Department of Comparative Literature; and as a minor, or part of a major, in other departments.

Requirements for Advanced Degrees

At present an advanced degree may be taken in either Greek or Latin, or in both, with one language as the major and the other as the minor field of study. Students majoring in either of the two languages will probably be required to take certain courses in the history of the literature of Greece and Rome, and may be required, if the Department thinks necessary, to take work in Ancient History.

Requirements for advanced degrees are stated in general on pages 25-32 of this catalogue. Exact prescription of courses can be determined only upon a knowledge of the needs of the individual applicant.

The Department regularly offers courses in the Summer School.

Courses in Greek

Courses for Graduates and Advanced Undergraduates

21-22. Greek Drama. An extended reading and study of the Greek Drama with lectures on the origin, development, and structure of the drama. *Winter and spring quarters.* Professor Bernard or Professor Sanders.

36. Greek Drama in English Translation. A course embracing the origin, growth, and structure of the drama with a thorough study of its chief masterpieces. An interpretation of one aspect of the Greek genius and its influence on Western literatures. *Spring quarter.* Professor Bernard.

43. The Greek New Testament. The Gospels, Acts of the Apostles, selections from the Epistles; the dialect, the manuscripts, history and principles of textual criticism, building of the revised text; the versions with emphasis on the English. *Spring quarter.* Professor Bernard.

53. Plato. *Winter quarter.* Professor Bernard.

Courses for Graduates

101 a-b-c. Greek Seminar. This course is devoted to the study in detail of particular authors or periods in Greek literature, the subject matter varying from year to year. It calls for wide reading in the Greek authors selected and in the criticial literature concerning them, with oral and written reports. Lectures and conferences. Professor Bernard.

COURSES IN LATIN

Courses for Graduates and Advanced Undergraduates

12. Roman Historical Literature. A study of the structure, purposes, and methods of the most significant works. Translation and reading in English from the literature; reports; lectures. (This course alternates with course 13; offered in 1924-1925.) *Fall quarter.* Professor Harrer.

13. Roman Dramatic Literature. A study of the historical development of Latin comedy and tragedy; reading of selected plays. (This course alternates with course 12, offered in 1925-1926.) *Fall quarter.* Professor Harrer.

19. Caesar. The political career and literary works of Caesar will be studied, and selections from the *Gallic* and *Civil Wars* will be translated. *Winter quarter.* Professor Harrer.

20. Cicero. A study of Cicero as statesman and advocate. Selected letters, as well as a number of the orations, will be read. *Spring quarter.* Professor Harrer.

30. Medieval Latin. The course is principally concerned with translating from the Latin works of leading authors of the Middle Ages, and with some study of the chief differences between Classical and Mediaeval Latin. Prerequisite, Latin 1-3, or the equivalent. *Winter quarter.* Professor Harrer.

31. Mediaeval Latin. A continuation of Latin 30, with extended readings from the Latin Literature of the period, and study of the importance of the leading writers in the history of literature. Prerequisite, Latin 30. *Spring quarter.* Professor Harrer.

51. The Latin Epic. The history of the Latin Epic; detailed study of the *Aeneid.* (The course is the same as Comparative Literature 51.) *Spring quarter.* Professor Howe.

52. The Poetry of Ovid. The reading in English of the complete works of Ovid, and special critical study of the *Metamorphoses* and of Roman elegy. (The course is the same as Comparative Literature 52.) *Fall quarter.* Professor Howe.

Courses for Graduates

101-102-103. Latin Seminar. The course is devoted to the study in detail of particular authors or periods in Roman literature, the subject matter varying from year to year. It involves wide reading in the Latin authors and in the critical literature concerning them, with oral and written reports by the student. Lectures and conferences. For the year 1925-1926: *Fall quarter,* Cicero (Professor Howe); *Winter quarter,* Roman Elegiac Poets (Professor Howe); *Spring quarter,* Tacitus (Professor Harrer).

104. Latin Epigraphy. The aim of the course is to acquire facility in the deciphering and translating of inscriptions, to study in detail a selection of significant inscriptions and their value in the field of Roman studies. *Fall quarter.* Professor Harrer.

105. Latin Paleography. The aim of the course is a study of the more important scripts, practice in decipherment, and the methods of textual criticism. *Winter quarter.* Professor Harrer.

DEPARTMENT OF COMPARATIVE LITERATURE

EDWIN GREENLAW, WALTER DALLAM TOY, *GEORGE HOWE, WILLIAM MORTON DEY, FREDERICK HENRY KOCH, NORMAN FOERSTER, WILLIAM STANLEY BERNARD, Professors.

HOWARD RUSSELL HUSE, Associate Professor.

The province of courses in this department is indicated by the following aims: (1) To acquaint students with significant periods in the development

* Absent on leave, 1924-1925.

of human culture through the medium of literature considered without regard to national or linguistic bounds. (2) To study, through translations, the chief literary masterpieces other than English, ancient and modern. (3) To gain some acquaintance with the special traits of various nationalities as revealed in their literatures, thus supplementing the study of history and of the various languages, and contributing to a better understanding of international relationships.

Courses in this department may be elected as a major for the degree of Master of Arts; as a minor, or part of a major, in other departments; or as a minor for the degree of Doctor of Philosophy.

Courses for Graduates and Advanced Undergraduates

51. The Latin Epic. The history of Latin Epic; detailed study of the *Aeneid*. *Spring quarter*. Professor Howe.

52. The Poetry of Ovid. The reading in English of Ovid's complete works, with detailed study of the *Metamorphoses*. *Fall quarter*. Professor Howe.

53. Plato. *Winter quarter*. Professor Bernard.

56. Dante. The *Vita Nuova* and the Divine Comedy; the precursors of Dante, and the poets of the *dolce stil nuova*. Special studies of Dante's political and social philosophy, with particular emphasis on Dante as a poet and as a guide. *Fall quarter*. Professor Huse.

61. The Renaissance. An introduction to the literature of the Renaissance in Europe, with some attention to the history of learning in that period. *Spring quarter*. (Given in 1925-1926 and in alternate years.) Professor Greenlaw.

68. Comparative Drama. A general survey of the drama and the theatre from Aeschylus to Ibsen. The development of dramatic literature is studied through representative plays of the leading European dramatists. *Winter quarter*. Professor Koch.

71. The Modern Drama. A study of representative plays of recent times, beginning with Ibsen. Special attention is given to the function of the drama in interpreting modern thought and changing social conditions. *Spring quarter*. (Given in 1925-1926 and in alternate years.) Professor Koch.

78. Literary Criticism. Through an analysis of the literary theories of Aristotle, Dryden, Johnson, Coleridge, Ste.-Beuve, Henry James, Anatole France, Croce, etc., this course aims to render clear the principles that have animated classical, pseudo-classical, romantic, and realistic literature. It includes a consideration of the modern scientific method in relation to the ultimate purpose of scholarship. *Spring quarter*. Professor Foerster.

90. Thesis Course. Open only to candidates for honors.

Courses for Graduates

117. Romanticism in Germany and England. This course traces the development of German romantic thought and art, and their influence in England. Attention is centered upon the problem of native and foreign elements in Coleridge, Wordsworth, and the young Carlyle. *Fall quarter*. Professor Foerster.

118. Romanticism in the United States. This course studies the influence of British and continental romanticism upon American writers, and the modification of the romantic tradition by the conditions of our life. Attention is centered upon a single topic or personality, varied from year to year. *Winter quarter*. Professor Foerster.

141. Research in a special field under the direction of a member of the Department.

DEPARTMENT OF ECONOMICS AND COMMERCE

*DUDLEY DEWITT CARROLL, CLAUDIUS TEMPLE MURCHISON, THOMAS L. KIBLER, WALTER JEFFRIES MATHERLY, ERLE E. PEACOCK, Professors.

ERICH W. ZIMMERMAN, WILLARD E. ATKINS, EDMUND BROWN, JR., JOHN BROOKS WOOSLEY, Associate Professors.

CORYDON P. SPRUILL, J. M. LEAR, Assistant Professors.

Owing to the closely allied nature of their work the Departments of Economics and Commerce, formerly separate, have been merged. This arrangement reduces to a minimum duplication of effort and facilities. At the same time it emphasizes the essential unity of purpose always insisted upon by the two departments; namely, that the Commerce courses should arise from a groundwork of Economics theory and should lead not only to explanations of characteristic business organization and practice, but also to an understanding of the relationships between business and economic life as a whole.

For convenience to the student, those courses in which the subject matter is treated mainly from a social point of view are grouped separately and classified under the heading, Division of Economics. Those courses tending to emphasize practice rather than principle are grouped in the Commerce Division.

The Economics Division is designed to provide training which is in thorough accord with the commonly accepted ideal of a liberal arts education. At the same time, it aims at producing trained economists qualified to undertake the more responsible types of business or professional activity which require familiarity with the basic facts and problems of commerce and industry.

For graduate students, the Commerce Division of the department offers a fairly high degree of specialization in various aspects of business. It recognizes that the business world is calling insistently for highly specialized experts, such as statisticians, research agents, field investigators, financial advisers, personnel managers, commercial agents, etc. The government in connection with its industrial and fiscal operations, its regulation of business, and its consular service, also requires a large number of men who have an understanding of the highly complicated phases of trade and industry.

The student may pursue specialized work in any of the following study groups; factory organization and administration; banking and finance; marketing; advertising and salesmanship; merchandising; personnel management; risk-bearing and insurance; transportation and shipping; business law; accountancy; foreign trade; municipal administration; commercial teaching. (For detailed description of these study groups, see the Bulletin of the School of Commerce).

The department offers two graduate degrees, master of arts, and master of science. Candidates for the arts degree should devote two-thirds of their time to courses in economics; their courses must be in a closely allied department.

In order to qualify for the degree of master of science in commerce, the candidate must hold the degree of B.S. in Commerce, or its equivalent, from this institution, or a like degree from any other standard college or university. He must devote two-thirds of his time to the courses in the Commerce Division, his other courses being in Economics or in a closely allied department.

DIVISION OF ECONOMICS

Courses for Graduates and Advanced Undergraduates

10. Money and Currency. Origin and functions of money. The standard problem. Relationship between money and prices. Economic principles governing the issuance and retirement of credit money. International gold movements. Inflation and deflation. Effects of the war upon the world's monetary systems. *Fall or winter quarter.* Professor Murchison.

* Absent on leave, 1924-1925.

11. Banking and Credit. The place of the commercial bank in the economic organization. Functions and major operations of a bank. Relationships between loans and discounts, deposits, reserves, capital and surplus. Process of financing the business man. Investigating the credit risk; determining the line of credit. The banking system as a whole; clearing house associations, correspondent banks, bankers' banks, the Federal Reserve system. Government control of banking. *Winter or spring quarter.* Professor Murchison.

12. Business Cycles. A study of the alternating periods of depression and prosperity. The underlying causes of panics and crises. Fluctuations in prices, trade volume, and physical production. *Winter quarter.* Professor Murchison.

13-14. Public Finance. A general study of the principles which are involved in public revenues and expenditures, and in the relation of organized society to the economic life of its members; a special study of taxation—local, State, and National. *Winter and spring quarter.* Professor Spruill.

15. Transportation. A general study, from the historical and critical points of view, of railway transportation in such representative countries as Great Britain, France, Italy, Germany, and the United States; with some consideration of passenger and freight traffic and rates, and the State's relations to railways. *Fall quarter.* Professor Kibler.

20. Risk and Risk-Bearing. A study of the risk element in modern industry together with the measures which have been devised to meet it. This course should precede the study of insurance. *Winter quarter.* Professor Atkins.

24. Principles of Marketing. This course sets forth the principles underlying general marketing practice. The assignments relate to marketing facilities and services (such as transportation, warehousing, grading, financing, assembling and distributing), marketing agencies and organizations, organized exchanges and future trading, and certain problems of competition and price policy. *Fall quarter.* Professor Brown.

26. International Trade. An advanced study of the principles and policies of international trade. *Fall quarter.* Professor Zimmerman.

30. Labor Problems. A study of labor as a factor in the industrial process; of the wage system and employment problems; of immigration and poverty; of labor organizations, strikes, lockouts, arbitration, factory legislation, and industrial education. *Spring quarter.* Professor Atkins.

40. Theories of Economic Reform. A critical analysis of the leading proposals for reform in the present economic system, including Socialism, Bolshevism, Single Tax, and Industrial Democracy. *Fall or spring quarter.* Professor Carroll.

Courses for Graduates

100a-b-c. Advanced Economic Theory. A survey of economic theory from the standpoint of the evolution of modern industrial society. The three courses will not only include a review of the works of the leading economic writers, but will also summarize the principal physical, psychic and social factors that have shaped economic theory and economic institutions. *Fall, winter, and spring quarters.* Professor Kibler.

106a-b-c hf. Economics Seminar. A general introduction to methods of advanced study. Some phase of economic activity is selected for consideration in harmony with the interests of the members of the seminar. Methods of work and content receive equal emphasis. *Fall, winter, and spring quarters.* Professor Murchison, Chairman.

Division of Commerce

(Courses in Commerce may be counted as a major toward a Master of Science in Commerce or a minor toward a Master of Arts degree).

Courses for Graduates and Advanced Undergraduates

4. Accounting Practice. Laboratory course. Bookkeeping systems and records for the various industries prevalent in North Carolina are studied and practice sets for each are prepared. A tentative list will include tobacco manufacturing, furniture manufacturing, cotton goods manufacturing, automobile sales agencies and garages, banks in small cities, and municipalities. *Winter quarter.* Professor Peacock. Laboratory fee, $3.00.

5. Cost Accounting. Lectures with laboratory work. Methods for collection of data relative to prime costs and careful analysis of various methods of burden distribution. Application of principles will be made in the laboratory by means of budgets for cost accounting in different classes of enterprise. *Fall quarter.* Professor Peacock. Laboratory fee, $2.00.

6. Auditing. Lectures and problems. Kinds of audits, systems of accounts, methods of conducting audits, and problems in auditing. *Winter quarter.* Professor Peacock. Laboratory fee, $2.00.

8hf. C. P. A. Problems. This course deals with the question and problems given by the different states and the American Institute in their C. P. A. examinations. Typical problems are solved, and solutions prepared by the leading accountants of the country are studied. *(Alternates with Commerce 9. Offered in 1923-24). Spring quarter.* Professor Peacock.

9hf. Municipal Accounting. Lectures with laboratory work. A study of the organization of a municipality; various accounting records; methods of collecting data, recorded in the books of original entry; the preparation of financial statements, budgets and budgetary control. A survey will also be made of the system prepared by the Bureau of Municipal Research. Laboratory work will consist of a practice set and an investigation of the systems in use by the municipalities in this vicinity. *(Alternates with Commerce 8. Not offered in 1923-24). Spring quarter.* Professor Peacock. Laboratory fee, $2.50.

14. Personnel Management. A critical study of the methods of hiring and handling employees in the various lines of industry. The supply, selection, training, promotion, transfer, and discharge of employees; the computation and significance of labor turn-over; housing, educational, and recreational facilities; the functions of an employment department with reference to efficiency and the maintenance of good will between employees and employers. *Spring quarter.* Professor Matherly.

16hf. Management Theories and Practices. A critical examination of the economic, social, and ethical aspects of modern business administration. Current theories of organization and management will be taken up and subjected to careful scientific analysis. Practices will be compared with theories. An attempt will be made to formulate the underlying principles upon which the administration of modern industrial enterprise rests. (Open only to selected seniors and graduate students). *Winter quarter.* Professor Matherly.

30. Types of Banking. A comparative study of specialized types of banking institutions,—their organization, methods, functions, and relationship to the financial organization of society in general. The course will include trust companies, investment banks, commercial paper houses, commercial discount companies, savings banks, and the various classes of agricultural credit banks. *Spring quarter.* Professor Murchison.

31hf. Banking Practice. Organization and management of a commercial bank. Duties and responsibilities of different departments. Bank accounting. Handling of credit instruments, checks, drafts, acceptances, bills of exchange. Critical examination of present methods and standards. *(Alternates with Commerce 35hf). Spring quarter.* Professor Murchison.

32. Business Statistics. Collection, classification, and presentation of business data. Construction of graphs and diagrams. Study of index numbers.

How to make a survey of a given business unit, and of business conditions generally. Each student is required to work out a problem involving simple research methods. *Fall quarter.* Professor Brown.

35hf. Foreign Exchange. A study of international banking operations; the credit instruments used in financing trade between nations; the forces determining rates of exchange. *(Alternates with Commerce 31hf. Not given in 1925-26. Spring quarter.* Professor Murchison.

36. Investments. A study of the various forms of investments with reference to their suitability for the different types of investors; the money market, its nature, and the financial factors which influence the price movements of securities; elements of sound investment and methods of computing net earnings, amortization, rights, and convertibles. The aim will be to train the student to act efficiently in a financial capacity either as a borrower or lender, as investor or trustee, or as fiscal agent of a corporation. *Winter quarter.* Professor Woosley. Laboratory fee, $1.00.

38. Insurance: Life. A study of the principles and technique of life insurance, including disability, accident and group insurance. Some attention will also be given to the investment operations of insurance companies. *Winter quarter.* Professor Lear.

39. Insurance: Fire, Marine, Bond and Title. In this course, an effort is made to consider as far as possible the wide range which the insurance function covers and the probable trend of its future development. The topics noted in the title of the course are studied and as many others as time will permit. *Spring quarter.* Professor Lear.

41. Marketing Practice. This course covers essential technique in the marketing of specific commodities as well as a development of the principles followed in practice. Each of the more important commodities or groups of commodities is discussed from the marketing standpoint, and the technical marketing operations on organized exchanges and in various types of business organizations are examined. *Fall quarter.* Professor Brown.

42hf. Marketing Problems. A seminar course for students who have done satisfactory work in the general course in Marketing. Each member of the class will be required to make an extensive survey of, and prepare a written report on, a marketing problem of current interest. *Spring quarter.* Professor Brown.

46. Foreign Trade Practice. This course treats foreign trade as a business profession and serves to prepare the student for entrance into the field. Research in foreign trade practice is also undertaken. *Winter quarter.* Professor Zimmerman.

47. Commercial Commodities. A study of world commerce in staple commodities such as wheat, cotton, wool, rubber, coal, tobacco, etc., and some selected specialties. Foreign market analysis with special reference to adjacent countries, South America, and the Orient. Foreign Trade Principles and Policies should precede this course. *Spring Quarter.* Professor Zimmerman.

50hf. Traffic Problems. A study of current technical problems in the field of transportation and traffic management. *Winter Quarter.* Professor Kibler.

51hf. Ocean Shipping. A study of the elements of water transportation, trade routes, ports and terminal facilities, vessel types, ship operation and management, ocean freight service and rates, marine insurance. The problems of our merchant marine and national policies affecting it are also discussed. *Spring quarter.* Professor Zimmerman.

62hf. Government and Business. A study of the evolution of government policy towards business, with a critical examination of current governmental regulation and supervision of industry and trade. Some attention is given to

the services which modern governments undertake to render to the business life of their citizens, and the agencies developed for this purpose. *Spring quarter.* Professor Atkins.

Courses for Graduates

106a-b-c. hf. Commerce Seminar. A general introduction to methods of advanced study. Some phase of business activity is selected for consideration in harmony with the interests of the members of the seminar. Methods of work and content receive about equal emphasis. *Fall, winter, and spring quarters.* Professor Murchison, Chairman.

141. Seminar. Individual research in a special field under direction of a member of the faculty.

DEPARTMENT OF EDUCATION

MARCUS CICERO STEPHENS NOBLE, EDGAR WALLACE KNIGHT, NATHAN WILSON WALKER, MARION REX TRABUE, ESEK RAY MOSHER, ARTHUR MELVILLE JORDAN, PAUL WASHINGTON TERRY, Professors.

Primarily it is the function of the Department of Education to train teachers and administrators for the public schools. It is no less its function to inform students whose primary interest lies in other fields concerning the place and functions of the public school as a necessary instrument in a democracy.

As a consequence there are offered in this department three distinct types of courses: (1) those strictly professional in nature; (2) those intended to assist other departments in placing students of those departments as teachers in the public schools of the state; (3) those which are more general and cultural in nature, but presented from the pedagogical viewpoint.

The Department of Education is centralized in the Peabody Building, a gift from the George Peabody Fund, equipped with recitation rooms, offices, laboratories, library, a reading and seminar room.

It has entered into active coöperation with the local school board by which the elementary and secondary units of the local school system are open for the use of faculty and students in the department.

In like manner the rural schools in Orange County are always available for observation and study by faculty and students. This arrangement includes the Orange County Training School for Negroes. Courses of both graduate and undergraduate grade are offered in the Summer School and through Extension classes, thus making it possible for teachers in service to earn credits towards the A.B., the A.B. in Education, or the A.M. degree.

In general the Department of Education strives to interpret and to serve the needs of the public schools of the state in so far as its resources will permit.

Courses for Graduates and Advanced Undergraduates

20. Educational Psychology. Prerequisite, Education 1, or Psychology 1-2. This course considers critically different topics, such as original nature of man, heredity versus environment, kinds of learning and factors influencing learning, individual differences, mental hygiene, mental measurement. Texts and lectures. *Fall, winter, and spring quarters.* Professor Jordan.

26. Public School Education in the South. This course gives a historical survey of public school eucation in the Southern States with especial attention to its development in organization, administration, and supervision since 1876. Present-day questions in rural education are studied in the light of their historical development, and attention is given to the educational reorganization needed for the proper solution of the new rural life problems. Textbook, lectures, investigations, and reports. *Fall, winter, or spring quarter.* Professor Knight.

29. History of Education in North Carolina. The purpose and development of education in North Carolina as seen in the work of the public, private, charity, and church schools. A comparative study of public education in North Carolina and other selected typical states of the American Union. Lectures, discussions, and assigned readings. *Fall or spring quarter.* Professor Noble.

31. Rural School Organization and Administration. A course planned to meet the needs of students preparing to become rural school teachers, principals, supervisors, and superintendents. It gives consideration to the organization, administration, and supervision of rural school education in the United States, with especial emphasis on the present condition in the South. The county as the unit of administration and support, federal aid and a national program for rural educational work, the application of the principles, agencies, and methods of supervision to the rural school will be studied. Textbooks, lectures, special investigations and reports. *Winter quarter.* Professor Knight.

36. Historic Foundations of Modern Education. This course traces the development of some of the more important educational problems of modern times as they have been affected by the social and political facts of history, by the contributions of the leading educational theorists, and by institutional practice. It deals with the growth of national systems of education and especially with the extension of popular education in the United States. Textbooks, lectures, investigations, and reports. *Winter quarter.* Professor Knight.

37. Public Education in the United States. The purpose of this course is to present the evolution of the educational practices and institutions of the United States. The elementary school, the secondary school, and the institutions of higher learning will be traced through: (a) the period of transplanting of European institutions; (b) the period of modification of institutional life to meet new conditions; and (c) the period of development of an educational system of free common schools, high schools, state universities, and technical schools, in harmony with the political and social ideals and institutions of America. Text-book, lectures, investigations, and reports. *Spring quarter.* Professor Knight.

42. The Elementary School Principalship. This course considers the duties, qualifications, and activities of the principal of an elementary school. Textbook, assigned readings, and special reports. *Spring quarter.* Professor Trabue.

43. Elements of Statistical Methods. The first meetings in this course will consider various methods of collecting data for educational, psychological, economic, and social investigations. The interpretation of data by graphic and mathematical devices will be taught chiefly by examples. Numbering, tabulation, the calculation of averages and variabilities, the transmutation of measures, and simple correlations will be included. Students will be required to plan experiments and statistical investigations for the solution of problems in their own fields of interest. Readings, demonstrations, problems, reports, and critical discussions. *Spring quarter.* Professor Trabue.

46. Classroom Management. A course for prospective teachers on the organization and direction of activities in the classroom as distinguished from the administration of an entire school. Class routine, lesson planning, conduct of the recitation, and extra-curricular activities will be included. Text-book, special readings, observations, and reports. *Winter quarter.* Professor Trabue.

48. The Classification of Pupils and the Supervision of Instruction. Various methods and devices for securing a satisfactory classification of pupils and for improving instruction offered by teachers will be studied and discussed. A good course in Educational Measurements is prerequisite. Textbooks, investigations, reports, and discussions. *Spring quarter.* Professor Trabue.

55. Social Policy and Education. Fundamental problems in the social and ethical theory of education. Lectures, prescribed readings, essays, and reports. Open to seniors and graduate students only. This course deals with problems of social progress from the standpoint of education, attempts to define a social policy for education, and discusses the vital educational issues involved in that policy. *Fall quarter.* Professor Walker.

56. Measurements in Secondary Education. Standard tests for measuring the results of secondary school instruction will be examined and discussed. An effort will be made to make students reasonably familiar with the necessary statistical methods for interpreting the results of tests and experiments. The use of measured results in the organization of classes and courses of study will be emphasized. Discussions, experiments, readings, reports, and exercises. *Winter quarter.* Professor Jordan.

62. Measurements in Elementary Education. Methods of measuring the results of instruction in the elementary schools will be demonstrated and discussed. The interpretation of test scores by statistical methods, and the employment of such scores in the improvement of educational results will be stressed. As far as possible the scores of elementary school pupils in North Carolina will be used as a basis for the exercises and discussions, readings, reports, and experiments. *Fall quarter.* Professor Jordan.

64. Mental Measurements. This course considers mental tests in their relation to the problems of classification of pupils and the supervision of their instruction. The problem of the correct placing of pupils so that they may progress at their best rate is a vital one. This course is designed to aid in solving this problem. Students registering for this course should have had Education (or Psychology 1-2) and one other course in Education. Textbook: Pintner, *Intelligence Testing. Winter quarter.* Professor Jordan.

Courses for Graduates

101a-b-c. hf. Problems in Secondary Education. This course is intended for graduate students and is primarily a course in investigation. To be admitted to it a student must have pursued other courses in secondary education. A student who has not taken Education 51 may be admitted only with the special permission of the instructor. At the beginning of the course each student is required to select some one problem for special investigation. The problem for investigation may be chosen by the student but must be subject to the approval of the instructor both as to field and method. A thesis will be required of each student. Throughout the year regular class discussions will be held on various problems in secondary education and assigned readings will be required. *Fall, winter, and spring quarters.* Professor Walker.

103a-b-c. hf. Problems in Educational Administration. A graduate course offering opportunity for intensive study and research on selected problems in the field of educational administration. The problems will be selected by the class each year, making it possible for the student to take this course more than once. Prerequisites: Education 40 and 41, or their equivalent. *Fall, winter, and spring quarters.* Professor Trabue.

104a-b-c. hf. Problems in Educational Measurements. Students who wish to specialize in educational measurements may take this course more than once if desired, for the problems considered will differ from year to year. Prerequisite: Education 62 or 56. *Fall, winter, and spring quarters.* Professor Trabue.

110a-b-c. hf. Problems in Educational Psychology. Prerequisites, Education 1 or Psychology 1-2, and preferably one other course in Educational Psychology. A graduate course treating intensively of the fundamental facts of educational psychology. This course is designed for those who intend to major

in educational psychology and for all those who wish a thorough grounding in the psychological principles of Education. *Fall, winter, and spring quarters.* Professor Jordan.

126a-b-c. hf. Foundations of Education in the South. In this course the various educational agencies will be studied by texts, lectures, special investigations, reports, and discussions, for the purpose of presenting (a) the development of present educational practices, tasks, and tendencies, and (b) the influence of the dominating economic, political, and social ideals in the evolution of the free common-school system, high schools, institutions of higher education. *Fall, winter, and spring quarters.* Professor Knight.

140. Seminar in Education. (Thesis course.) This course is open only to graduates and is devoted to research in connection with dissertations. It is intended for those students whose graduate major is in education, but others whose thesis topic is closely related to education are invited to attend and to take part in the discussions. The Professors in the School of Education.

DEPARTMENT OF ELECTRICAL ENGINEERING

Parker Hayward Daggett, John Emery Lear, Professors.

The Department of Electrical Engineering offers courses leading to the degree of Master of Science in Electrical Engineering. The requirements for the degree are in general the same as for the degree of Master of Arts and the prescribed courses may be found on page 29. Admission to candidacy for this degree presupposes the completion of the regular four-year course of this University leading to the degree of Bachelor of Science in Electrical Engineering. In the case of students from other technical schools of recognized standing certain substitutes may be accepted in lieu of the specific requirements for the bachelor's degree here.

The degree may ordinarily be obtained in one year after the conferring of the bachelor's degree, but in certain cases, where the preliminary training of the candidate has been insufficient, two years may be necessary.

With the opening of the new laboratories in the Phillips Building the department is able to offer excellent advantages for advanced work in laboratory investigation and engineering design. The laboratories comprise a total of nearly seven thousand square feet of floor space divided into a large dynamo laboratory containing over fifty generators, motors, and transformers; a standardization laboratory equipped with a wide range of precision standards for both direct and alternating current measurements; a well equipped photometric laboratory; a radio laboratory, and a special research laboratory equipped with a complete General Electric oscillograph outfit.

All of these laboratories are supplied with direct and alternating current power by means of a plug and socket system of connections, eight wires running from a large slate switchboard in the main laboratory to sub-panels located conveniently in the smaller rooms. A 220-volt storage battery is available for work where a steady voltage is necessary.

The University Power Plant offers excellent additional facilities for commercial testing and economic study of an advanced nature.

Through the generosity of Captain Isaac Edward Emerson, of Baltimore, the department possesses a very fine library of well-chosen text reference-books in both electrical and mechanical engineering, as well as files of the leading electrical engineering journals, American and foreign, some of which are complete to date.

Investigations already undertaken or in contemplation include the end-ring leakage reactance of squirrel-cage induction motors, current wave-shapes in the three-wire generator, automatic signalling for local battery telephone system, brush drop phenomena, and resistance of coils at radio frequencies.

Courses for Graduates and Advanced Undergraduates

64a-b-c. Alternating Current Machinery. An analytical study of e.m.f. and current-wave shapes; effect of iron cores; the transformer; the alternator; the synchronous motor, induction motor, repulsion motor; the synchronous converter. The laboratory work will follow closely the class-room study. Prerequisites, Engineering 63a-b-c and Mathematics 4-5-6E, or equivalent. *Eight hours a week. Fall, winter, and spring quarters.* Laboratory fee, $7.00 a quarter. Professor Daggett.

74a. Electric Circuits. A mathematical study of the fundamental phenomena in the electric, magnetic, dielectric, and thermal circuits, emphasizing the circuital relations common to all. Considerable attention will be devoted to the application of complex quantities to alternating current circuits. Prerequisites, Engineering 63a-b-c and Mathematics 4-5-6E, or equivalent. *Three hours a week. Fall quarter.* Professor Lear.

74b. Hydro-Electric Power and Transmission. A survey of the problems involved in hydro-electric power developments and the transmission of electric power over long distances. Application of hyperbolic functions to the calculating of long lines. Study of super-power systems. Prerequisites, Engineering 32b-c and 74a. *Three hours a week. Winter quarter.* Professor Lear.

74c. Electrical Equipment Projects. Solution of problems involving the application of electrical energy to various industries. The problems will be varied to suit the individual needs of the members of the class. Especial attention will be given to problems of importance to North Carolina industries. Prerequisites, Engineering 63a-b-c or equivalent. *Three hours a week. Spring quarter.* Professor Lear.

84a-b-c. Dynamo Design. Electrical, mechanical and economic questions involved in the design of electrical machinery; the effect of the design constants on the proportions and operation of machines. Each student will be required to make complete calculations for a.d.c. generator or motor, a transformer and an alternator. Co-requisite, Engineering 64a-b-c. *Six hours a week. Fall, winter, and spring quarters.* Professor Lear.

Courses for Graduates

110a-b-c. Electrical Engineering Seminar. An advanced course in electrical theory, including the study of distributed inductance and capacity, transient phenomena, e.m.f. wave-shapes in alternators and synchronous-converters and the application of hyperbolic functions to the solution of problems in power transmission and telephone circuits. Credit, 3 courses. *Fall, winter, and spring quarters.* Professor Daggett.

115a-b-c. Electrical Engineering Research and Design. The solution of one or more definite problems in some particular field of electrical engineering. The work of this course will be outlined, as far as possible, to suit the needs of the individual student, and will consist of original investigations, designs, or the economic study of some existing electric power plant. Credit, 3 courses. *Fall, winter, and spring quarters.* Professor Daggett.

DEPARTMENT OF ENGLISH

EDWIN GREENLAW, JAMES FINCH ROYSTER, FREDERICK HENRY KOCH, NORMAN FOERSTER, JOHN MANNING BOOKER, THORNTON SHIRLEY GRAVES, Professors.
WILLIAM FLINT THRALL, CLARENCE ADDISON HIBBARD, Associate Professors.
ALMONTE CHARLES HOWELL, GREGORY LANSING PAINE, Assistant Professors.

The Department of English offers to graduate students work in the following fields: (1) research leading to advanced degrees, with the training afforded by specialized courses in literature; (2) preparation for teaching English; (3) special study of the drama, including dramatic composition and training for work in community drama.

1. Intensive study and research are made effective through advanced lecture courses and the seminars, through the resources of a well-equipped library, and through the stimulus of association with men who are actively interested in research. The library is especially strong in the field of Old and Middle English, in the literature of the sixteenth and seventeenth centuries, and in dramatic literature. Besides its share of the annual library appropriation, the department has the income from the Armfield Fund, which is applied exclusively to the purchase of books for advanced study. Several special appropriations have been made in the last two years, and two important collections have been added.

2. In addition to the advanced courses, which afford opportunity for gaining that sound and accurate knowledge that is the first essential of good teaching, the attention of teachers of English and of those who are preparing for such work is directed toward the development of an effective method. Such students have an opportunity to observe the methods of teaching and administration employed in the large undergraduate courses in English. Certain experiments in teaching these courses are now being tested; graduate students observe these experiments and discuss them with the instructors.

3. Apart from the intensive study leading to the doctor's degree and the special preparation for teaching English, there are opportunities for work in specific fields, such as the drama, with a somewhat different point of approach. In the course in dramatic composition, in the work of the Carolina Playmakers, and in extension work in community drama, advanced students find a field of constantly increasing interest.

Requirements for Advanced Degrees

Candidates for advanced degrees in the Department of English must have completed, before admission to candidacy, a sufficient number of undergraduate courses in English to constitute a major. The courses elected by a candidate for the master's degree must include English 131, one course dealing with the language or literature before Shakespeare, and two courses in a field chosen for intensive study. All the courses may be chosen from the Department of English; or a minor may be chosen from some other department in the Division of Language and Literature, or, in special cases, from a department in some other division. The plan of work as a whole must be closely unified, and no department may be chosen as a minor unless the candidate has previously completed, as an undergraduate, an amount of work in that department sufficient to constitute an undergraduate minor. Advanced courses in the Department of Comparative Literature may, with the approval of the special committee directing a student's work, be counted as a part of the English major.

A reading knowledge of at least one foreign language is required for the degree.

For the degree of Doctor of Philosophy the same general procedure is followed, except that after the first year of study less attention is paid to credit gained for courses and more stress is put upon independent work.

Courses for Graduates and Advanced Undergraduates

40. English Literature, 1557-1674. A survey of English literature, exclusive of the drama, from the beginning of the Elizabethan period to the death of Milton. (Offered in 1925-1926 and in alternate years.) *Fall quarter.* Professor Greenlaw.

41. Spenser. A study of the poetry of Spenser as an introduction to the English Renaissance. (Offered in 1924-1925 and in alternate years.) *Fall quarter.* Professor Greenlaw.

42. Bacon. A study of the works of Bacon, with emphasis on his relation to educational and political theory and his contribution to scientific method. (Offered in 1924-25 and in alternate years.) *Winter quarter.* Professor Greenlaw.

43-44. The Elizabethan Drama. A brief study of the beginnings of the English drama, followed by an intensive study of the period from Lyly to the closing of the theatres. The works of Shakespeare are considered in their relationship to those of his immediate predecessors and contemporaries. Students who propose to elect this course are advised to prepare for it by taking at least one of the following courses: English 37, 38, 40, 41, 42. (Offered in 1924-1925 and in alternate years.) *Winter and spring quarters.* Professor Graves.

45. Milton. The works of Milton are studied in the light of the life, times, and culture of the poet, with some consideration of the problems involved in such a study. (Offered in 1925-1926 and in alternate years.) *Winter quarter.* Professor Greenlaw.

47-48. English Life and Thought in Eighteenth Century Literature. A survey of English literature from 1660 to 1789, emphasizing (1) changes in national life and manners; (2) the growth of philosophic and political systems; (3) certain characteristic literary forms, such as comedy, the essay, and the novel. *Double course. Fall and winter quarters.* (Offered in 1924-1925 and in alternate years.) Professor ————.

60. American Literature. A study of a limited subject, varied from year to year. Prerequisite, English 69. *Spring quarter.* Professor Foerster.

65. American Literature. A study of the literature of the early national period in relation to English literature, with special attention to Freneau, Irving, Bryant, and Cooper. Open to those who have had one or more of the following courses or an equivalent: English 59, 60. *Fall quarter.* Professor Paine.

68. Comparative Drama. A general survey of the drama and the theatre from Aeschylus to Ibsen. The development of dramatic literature is studied through representative plays (in translation) of the leading European dramatists. *Winter quarter.* Professor Koch.

69. Nineteenth Century Drama. A study of the representative English plays of the nineteenth century. Particular attention is paid to the beginnings of a new folk drama in America. (Offered in 1926-1927 and in alternate years.) *Spring quarter.* Professor Koch.

71. The Modern Drama. A study of representative plays of recent times, beginning with Ibsen. Special attention is given to the function of the drama in interpreting modern thought and changing social conditions. *Spring quarter.* (Offered in 1925-1926 and in alternate years.) Professor Koch.

75. Restoration and Eighteenth Century Drama. A rapid survey of the progress of English drama from the Restoration to Sheridan. Special emphasis will be placed upon the types of drama that flourished during the years 1660-1790 and the influences that determined the theatrical conditions of the period. *Winter quarter.* (Given in 1925-1926 and in alternate years.) Professor Graves.

78. Literary Criticism. Through an analysis of the literary theories of Aristotle, Dryden, Johnson, Coleridge, Ste.-Beuve, Henry James, Anatole France, Croce, etc., this course aims to render clear the principles that have animated classical, pseudo-classical, romantic, and realistic literature. It includes a consideration of the modern scientific method in relation to the ultimate purpose of scholarship. *Spring quarter.* Professor Foerster.

81. Old English. Introductory Course. A study of Old English grammar and syntax. A considerable amount of Old English prose is read. *Fall quarter.* Professor Royster.

82. Present-day English. A consideration of the habits of current English; recent spread of English; American English; class and geographical dialects; written and spoken language; word growth and decay; other tendencies observable in the living language. *Spring quarter.* Professor Royster.

83. Middle English. Chaucer. Previous training in Old or Middle English is not a fixed prerequisite. The work of the course will consist chiefly of a reading and discussion of Chaucer's works with some consideration of Chaucer's language. *Winter quarter.* (Given in 1924-1925 and in alternate years.) Professor Royster.

84. Middle English Literature: Exclusive of Chaucer. The main purpose of the course is to acquaint the student with the social, political, and religious background of medieval England. A fuller study will be made of the historical and philological relations of Middle English than in English 83. *Winter quarter.* (Given in 1925-1926 and in alternate years.) Professor Royster.

Courses for Graduates

101. Beowulf. Prerequisite, English 81. *Spring quarter.* (Given in 1924-1925 and in alternate years.) Professor Royster.

110a-b-c. Studies in Elizabethan Literature. Research in special problems in Elizabethan literature, open to those who have had one of the following courses or an equivalent: English 40, 41, 42, 45, Comparative Literature 61. (Offered in 1925-1926 and in alternate years.) *Throughout the year.* Professor Greenlaw.

112a-b-c. Studies in Seventeenth Century Literature. Research in special problems in the literature and thought of the seventeenth century, open to those who have had one or more of the following courses or an equivalent: English 40, 41, 42, 45, or Comparative Literature 61. (Offered in 1924-1925 and in alternate years.) *Throughout the year.* Professor Greenlaw.

117. Romanticism in Germany and England. This course traces the development of German romantic thought and art, and their influences in England. Attention is centered upon the problem of native and foreign elements in Coleridge, Wordsworth, and the young Carlyle. *Fall quarter.* Professor Foerster.

118. Romanticism in the United States. This course studies the influence of British and continental romanticism upon American writers, and the modification of the romantic tradition by the conditions of our life. Attention is centered upon a single topic or personality, varied from year to year. *Winter quarter.* Professor Foerster.

125-126-127. Dramatic Theory and Practice. The purpose of this course is two-fold: to study the development of dramatic technique and criticism; and to give to graduate students an opportunity for advanced work in dramatic composition and production. The growth of dramatic theory and practice is treated in a comparative study of the chief periods of dramatic literature. In the original play-writing emphasis is placed on the materials of native tradition and present-day life. The Carolina Playmakers furnish a working laboratory in production for plays written in this course. In this way the essentials of stage craft are studied and demonstrated in practice. *Fall, winter, and spring quarters.* Professor Koch.

131. Seminar. Methods. The principles and methods of the higher study of English. A general introduction to graduate work with a series of simple problems in bibliography and literary history. *Fall quarter.* Professor Graves, chairman.

141. Research in a special field under the direction of a member of the department.

DEPARTMENT OF GEOLOGY

COLLIER COBB, WILLIAM FREDERICK PROUTY, Professors.
JOEL HOWARD SWARTZ, Assistant Professor.

To men entering the profession of geology opportunities for useful employment are open in teaching, in state and national bureaus and surveys, in mining, in investigating oil fields, in working various economic geologic deposits, and in soil investigation. Preparation for this work may be had through the regular college course, with geology as the major study throughout the course, and the addition of field work in vacation and work in the Graduate School for one or more years. It may also be obtained through a course in the School of Applied Science leading to the degree of Bachelor of Science in Geology; and this should in every case be followed by work leading to the degree of Master of Science as outlined below.

The work of the graduate student specializing in geology should be, in large measure, the investigation of problems in the field, and the working out of many of the details in the laboratory. At the present time the following lines of investigation are being pursued by members of the Department of Geology: mineral analysis of seashore sands and their value as a source of economic minerals, shore-line processes in relation to harbor development, the pegmatite deposits of North Carolina, the character and location of road materials in relation to highway construction in North Carolina, geological map of the Chapel Hill area, stratigraphic sequence in Catawba Valley, Va., and Hardy County, W. Va., and of the Western portion of the Cumnock Coal Basin.

Graduate Degrees in Geology

The course leading to the degree of Master of Science in Geology is open to students who have graduated with the degree of Bachelor of Science in Geology in this University, and to students who have completed the equivalent of a course as prescribed by the University. The course consists of a special research in some one branch of geology, pursued throughout the year, and six weeks of field-work in the summer under the direction of a member of the graduate faculty, followed by the completion of the investigation during the fall term. These researches constitute six full courses for the master's degree. In addition to this major, the candidate must complete three approved courses in one or more of the following departments: chemistry, civil engineering, zoölogy, or botany.

For the degree of Doctor of Philosophy the same procedure is followed, except that after the first year of study less attention is paid to credit gained for courses and more stress is put upon independent work.

Geological Laboratories and Museum

The geological laboratories occupy the first floor and three rooms on second floor of New East building and basement room in Alumni. In addition to a lecture room with a seating capacity of about fifty, there are laboratories for mineralogy and economic geology, dynamics and structural geology, petrology, soil investigation and photographic work. The laboratories are well supplied with minerals, rocks, thin rock sections, materials for study of economic geology, lantern slides, maps, charts, microscopes and instruments for advanced work.

The department library is open to all students specializing in geology. The larger library of the North Carolina Geological and Economic Survey, situated in the second floor of New East, is accessible to graduate students.

The geological museum on the first floor of New East contains large collections of minerals, rocks, and fossils. It is open daily to the student body and the public.

Courses for Graduates and Advanced Undergraduates

11. Non-metallic Mineral Deposits. Lectures, laboratory work and special reports. Prerequisite, Geology 1-4. *Fall quarter.* Professor Prouty and Assistant.

12. Metallic Mineral Deposits. Lectures, laboratory work and special reports. Prerequisite, Geology 1-4. *Winter quarter.* Professor Prouty.

13. Petrology. Study of the common rocks without the aid of the microscopes; lectures, laboratory work and field work. Prerequisite, Geology 1-4. *Winter quarter.* Professor Cobb.

14. Petrography. Identification of rocks and minerals, in fragments and thin sections, by use of the polarizing microscope; lectures and laboratory work. Prerequisite, Geology 3-4 and 13. *Spring quarter.* Professor Prouty.

15. Structural and Field Geology. Lectures with laboratory work and field work. Prerequisite, Geology 1-4. *Fall quarter.* Professor Prouty.

16. Stratigraphical Geology. Lectures and laboratory work. Prerequisite, Geology 1-2. *Winter quarter.* Professor Prouty and Assistant.

17. Oil and Gas Geology. Lectures, collateral reading and reports. Prerequisites, Geology 1-2, Chemistry 1-2. *Spring quarter.* Professor Prouty.

24-25. Origin and Nature of Soils. Lectures, laboratory work and field investigation. Students in this course are expected to keep Saturdays open for field work. Prerequisites, Geology 1-4, Chemistry 1-2 and 31-32, Botany 1-2. *Winter and spring quarters.* Professor Cobb and Assistant.

28. Plain-table Mapping of Special Area. Mostly field work. Students in this course are expected to keep Saturdays open for field work. *Fall quarter.* Professors Cobb and Prouty.

51-52-53. Advanced Field Work and Special Research in Geology and Geography. Problems assigned individually and work adapted to the professional needs of the student. Students in this course are expected to keep Saturdays open for field work. This course may be continued under the same number for more than one year as the subject advances, credit being given for each repetition. *Throughout the year.* Professors Cobb, Prouty and Swartz.

71-72-73. Principles of Paleontology. Anatomy, histology and development of animal life, with identification of fossils in the laboratory. This course may be continued under the same number for more than one year as the subject advances, credit being given for each repetition. *Three hours of lecture and four hours (two periods) of laboratory work each week. Throughout the year.* Laboratory fee, $5.00 each term. Professor Swartz.

74. Advanced Invertebrate Paleontology. This course will take up a detailed study of the anatomy, embryology, and classification of the Echinozoa, Bryozoa, and Brachiopoda, with especial attention to the latter sub-phylum. In the laboratory fossils of these groups will be carefully studied and identified. *Three hours of lecture and four hours of laboratory work per week. Fall quarter.* Professor Swartz.

75. Advanced Invertebrate Paleontology. In this course will be pursued a detailed study of the anatomy, embryology, and classification of the Pelecypoda, Gasteropoda, Cephalopoda, Pterypoda, Scaphopoda, and Amphineura, with especial attention to the first three groups. In the laboratory typical forms, both recent and fossil, will be carefully studied and identified. *Three hours of lecture and four hours of laboratory work per week. Winter quarter.* Professor Swartz.

76. Advanced Invertebrate Paleontology. This course will pursue in detail a study of the anatomy, embryology, and classification of the Arthropoda with especial attention to the Trilobita, Arachnida, and Insecta. In the labora-

tory suitable material, both recent and fossil, will be carefully studied and identified. If time permits a discussion of vertebrate anatomy will be taken up in the latter part of this course. *Three hours of lecture and four hours of laboratory work per week. Spring quarter.* Professor Swartz.

81. Advanced Historical Geology. In this course the basic principles of Historical Geology will be discussed, the dawn of geologic ages taken up, and the geological history of the Archaean, Algonkian, and Paleozoic eras carefully studied. *Three hours of lectures per week. No laboratory. Fall quarter.* Professor Swartz.

82. Advanced Historical Geology. This course will pursue a detailed study of the periods and formation of the world of Mesozoic age. *Three hours of lectures per week. No laboratory. Winter quarter.* Professor Swartz.

83. Advanced Historical Geology. In this course periods, formations, and life of the Tertiary and Quarternary eras throughout the world will be carefully studied. *Three hours of lectures per week. No laboratory. Spring quarter.* Professor Swartz.

91-92. Summer Field Course in Geology. Prerequisite, Geology 1-2. A six weeks course to be given in North Carolina and bordering states. In this course economic, structural, and stratigraphic geology and geological mapping will be emphasized. For details of course see special bulletin, Geology Courses, University of North Carolina. (Offered in 1925-1926 and in alternate years.) Professors Cobb, Prouty, Swartz, and Assistants.

93-94. Summer Field Course in Geology. Prerequisite, Geology 1-2. This course is of the same character as 91-92, but it is to be given in alternate years with 91-92 and in a different type of geological area. (Offered in 1926-1927 and in alternate years.) Professors Cobb, Prouty, and Swartz.

Courses for Graduates

104-105-106. Special Research in Geology and Geography. The student is expected to devote six weeks to work in the field, accompanied by the instructor, and to work up his results during the first term of the college year. The entire research constitutes three courses. This course may be continued under the same number for more than one year as the subject advances, credit being given for each repetition. Professors Cobb and Prouty.

107-108-109. Special Research in economic geology, in historical geology, or in petrology and petrography, two quarters of which must be taken as a seminar course.

DEPARTMENT OF GERMANIC LANGUAGES

WALTER DALLAM TOY, KENT JAMES BROWN, Professors.

ERNST CHRISTIAN METZENTHIN, Assistant Professor.

The courses for advanced undergraduates and graduates offered by the German Department are designed to meet the needs of three classes of students: those whose interest in language and literature prompts them to pursue their German studies beyond the undergraduate stage; those who are preparing to teach in schools and private academies; and those who purpose to adopt the study of Germanic languages as a profession.

For all of these classes the department offers courses covering different periods of the language and literature. The dialect courses are intended primarily for those who will specialize in Germanic languages.

The Department of Germanic Languages and Literatures is laying the foundation for a library adequate for research in special fields; notably at present, for problems relating to Goethe, for the dramatic work of Kleist, Grillparzer, and Hebbel, and for the history of the German novel.

The critical apparatus is carefully chosen. There are complete bibliographies and full sets of the leading journals. All scholarly editions of important monuments of literature from the Gothic period to the present time are available, as well as many valuable monographs. The latter embody the results of research both in philology and literature.

Courses for Graduates and Advanced Undergraduates

41-42. Goethe's Life and Works. Lectures, reading, reports. Götz von Berlichingen, Werthers Leiden, Tasso, Gedichte, Hermann and Dorothea, Wilhelm Meister, Briefe, Dichtung and Wahrheit. Prerequisite, German 21-22, or 23, or 25-26. This course may be electetd only after consultation with the instructor. *Double course. Fall and spring quarters.* Professor Brown.

43-44. Goethe. *Faust,* Parts I and II. Prerequisite, German 21-22, or 23, or 24-25. This course may be elected only after consultation with the instructor. *Double course. Fall and spring quarters.* Professor Toy.

45. German Drama of the Nineteenth Century. Lectures, reading, reports. Kleist, Grillparzer, Hebbel, Ludwig, Hauptmann. Prerequisite, German 21-22, or 25-26. *Fall quarter.* Professor Brown.

61. Introduction to Comparative Philology. A study of the theories of the origin and development of human speech; primitive languages (American Indian); classification and history of languages; peculiarities of the Semitic branch (Hebrew); the Indo-European branch; classical languages; Baltic-Slavonic and Romance group (especially French); Germanic family; Gothic, Old Saxon, Old English, Old High German. This course may be elected only after consultation with the instructor. Prerequisites: one classical and one modern foreign language. *Spring quarter.* Professor Metzenthin.

Courses for Graduates

101. Gothic. Braune's *Gotische Grammatik;* selected parts of Paul's *Grundriss der Germanischen Philologie.* Introduction to Germanic philology. Prerequisite, German 21-22, or 23, or 25-26. (Given in 1924-1925 and in alternate years.) *Winter quarter.* Professor Toy.

103. Old High German: Braune's *Althochdeutsche Grammatik;* Braune's *Althochdeutsche Lesebuch.* Prerequisite, German 21-22, or 23, or 25-26. (Given in 1925-1926 and in alternate years.) *Spring quarter.* Professor Toy.

105. Old Saxon. Introduction to the Grammar and Syntax of the Old Saxon dialect of the Germanic language; comparison with Old English and Old High German. Study of *Heliand* and *Genesis* [including the characteristics of the Heroic Epic and its alliterative form] as well as of the minor prose Low German documents of the 9th and 10th centuries, based on Otto Basler, *Altsaechsisch* (Freiburg, 1923). Prerequisite, Advanced German or Old English. *Fall quarter.* Professor Metzenthin.

107. Middle High German. Paul's *Mittelhochdeutsche Grammatik;* Bachmann's *Mittelhochdeutsches Lesebuch;* translation into New High German. Prerequisite, German 21-22, or 23, or 25-26. *Winter quarter.* Professor Brown.

DEPARTMENT OF GREEK

See page 39.

DEPARTMENT OF HISTORY AND GOVERNMENT

Joseph Gregoire deRoulhac Hamilton, Henry McGilbert Wagstaff, *William Whatley Pierson, Jr., Robert Diggs Wimberly Connor, Professors.
*Frank Porter Graham, Wallace E. Caldwell, Chester P. Higby, Francis Butler Simkins, Associate Professors.
Albert R. Newsome, Keener Chapman Frazer, Assistant Professors.

* Absent on leave, 1924-1925.

The resources of the University for graduate instruction by the department make possible the offering of courses under the following heads: History of the Civil War and Reconstruction, Constitutional History of the United States, American political theories, Hispanic-American history, international relations, and North Carolina and Southern history.

The Library

The library resources for graduate study in History at the University of North Carolina offer exceptionally rich materials in two fields—those of North Carolina history and the Civil War period. The University has had the good fortune to acquire the collection of Dr. Stephen B. Weeks, which contains more than 10,000 titles of books, pamphlets, newspapers, and manuscripts relative to the history of North Carolina. This collection—together with other works possessed by the library, particularly those placed there by the North Carolina Historical Society, and with the manuscripts of the North Carolina Historical Commission, to which the students may have access—must be regarded by historians as one of the important collections in the United States. The Kenan fund for materials on the Civil War period has enabled the library to secure a constantly increasing collection, which is especially complete in materials on military history. Recent additions, including a partially complete set of Hansard reports and an important group of books, documents and pamphlets have been made respectively in English and in Hispanic-American history. The Peabody Collection provides a basis for the study of international law and diplomacy. In the Kidder, Clark Bridgers, and Howard collections the University library has a noteworthy group of newspaper materials.

History Seminar Room

The history seminar room, equipped with tables and filing cases, is a repository of important newspaper collections. It is the headquarters for graduate students in History and is situated within easy access to the stacks.

Publications

Under the direction of the North Carolina History Society and under the editorship of certain members of the department, there are published the James Sprunt Historical Publications. Aided by the benefactions of Dr. James Sprunt, of Wilmington, N. C., these publications have reached sixteen volumes. The contents, it may be noted, have in the main been relative to the North Carolina State and colonial history and government, and its pages have been open to students as well as to specialists.

HISTORY

Courses for Graduates and Advanced Undergraduates

31. History of the Orient and Early Greece. An advanced course in the history of the Bronze Age in the Mediterranean, the beginning of civilization in Egypt, Babylonia, Syria and Palestine, and Crete, and the history of their development down to the time of the Persian Empire. Attention will be given to the hieroglyphic and cuneiform scripts, to economic conditions, government and law, artistic and literary achievements, and religion. (Offered in 1925-1926 and alternate years). *Fall quarter.* Professor Caldwell.

32. History of Greece. A history of the classical periods of Ancient Greece; the Homeric Age; the Expansion of the Hellas, the Renaissance of the Aegean, the Fifth and Fourth Centuries to the death of Alexander. Particular attention will be given to the growth of democracy, social and economic aspects, artistic, literary, and religious developments. (Offered in 1925-1926 and alternate years). *Spring quarter.* Professor Caldwell.

33. History of Hellenistic Greece and the Roman Republic. A survey of the world into which Rome entered, the political, economic and social conditions of the Eastern Mediterranean, Hellenistic Art, literature and religion, the establishment and growth of the Roman Republic, Roman expansion throughout the Mediterranean, the growth of Roman culture, the Roman Revolution, and the foundations of the Empire. (Offered in 1924-1925 and alternate years). This course alternates with Course 31. *Fall quarter.* Professor Caldwell.

34. History of the Roman Empire and the Early Middle Ages. A survey of history from Augustus to Charlemagne; the organization and administration of the Roman Empire, Social, economic, and religious conditions and developments, the collapse of ancient civilization, the Germanic invasions, the foundation of feudalism and the Medieval Church, Charlemagne, and the Empire. (Offered in 1924-1925 and alternate years.) This course alternates with Course 32. *Spring Quarter.* Professor Caldwell.

35. Medieval History. A survey of the foundations of the Middle Ages and a careful study of the political history, institutions, political, social and economic, the church, the cathedrals, and the universities to the time of the Renaissance. *Winter quarter.* Professor Caldwell.

37. The Protestant Revolt. A study of the religious, intellectual, political, end economic aspects of the Protestant Revolt, with detailed consideration of the sixteenth century organization and criticism of the Catholic Church; the religion and dogmas of Luther, Zwingli, Calvin, Knox and Cranmer; the influence of nationalism and absolutism, on the revolution; the Catholic counter-reformation; and the establishment of state churches. *Fall quarter.* Professor Higby.

39. England in the Nineteenth Century. The purpose of this course is to effect an intensive treatment of a relatively short period of English History, that from 1815 to 1915. The course will develop England's national and imperial story, her international relations, and her contributions to the history of the age. Lectures and readings. *Spring quarter.* Professor Wagstaff.

40. The French Revolution. A course which deals with the causes—political, intellectual, social, and economic—, events and results of the French Revolution. Lectures, text-books, and readings. *Spring quarter.* Professor Higby.

42. The Napoleonic Period. A study of the chief events and movements of the Napoleonic period and of its immediate and permanent effects. *Spring quarter.* Professor Higby.

43-44. Modern Europe. A study of the principal political, economic and social movements in the history of Europe since 1815. *Winter and spring quarters.* Professor Higby.

51. Colonial American History. A general survey of the British colonies in America in the 17th century; European background; territorial claims and European expansion; race elements; social, economic and political development. Text-book, lectures, readings and reports. (Offered in 1925-1926 and alternate years). *Winter quarter.* Professor Connor.

52. Colonial American History. A general survey of the British colonies in America in the 18th century; imperial relations and colonial self-government; race elements; international rivalries; conquest and westward expansion; constitutional controversies; intercolonial relations and the development of union; revolution and independence; Federal relations and the adoption of the Constitution of the United States. Text-book, lectures, readings and reports. (Offered in 1926-1927 and alternate years). *Winter quarter.* Professor Connor.

53. The Federal Period. (1783-1815.) An intensive study is made of the government under the Articles of Confederation, the formation and adoption of the Federal Constitution, the nature of the Union, the launching of the

government, Jeffersonian democracy, the westward movement and the Second War for Independence. Text-book, lectures, readings and reports. (Offered in 1925-1926 and alternate years). *Fall quarter.* Professor Newsome.

54. The Ante-Bellum Period. (1815-1860.) A social, economic, and political study of the period—the Westward Movement, State Rights, philosophy, Jacksonian democracy, development of Nationalism, controversy over negro slavery, the rest of Southern Rights, and the causes of the stroke for Southern Independence. Text-book, lectures, readings, reports. (Offered in 1924-1925 and alternate years). *Fall quarter.* Professor Newsome.

55. Secession and Civil War. Beginning with a rapid survey of the states' rights theory and of the secession movement before 1860. This course deals with the important constitutional, political, and economic aspects of the Civil War in the United States. Lectures, readings, and reports. (Offered in 1926-1927 and alternate years.) *Winter quarter.* Professor Hamilton.

56. The Reconstruction Period. A course dealing with the constitutional, political, social and economic aspects of the period from the close of the Civil War in 1865 to the restoration of home rule in the South in 1877. Lectures, readings, and reports. (Offered in 1925-1926 and alternate years). *Winter quarter.* Professor Hamilton.

57. Contemporary American History. The History of the United States from 1876 to 1898. In this course emphasis will be placed upon the influences of the Civil War and Reconstruction upon subsequent American History; the war amendments in theory and practice; business and politics; the Granger movement; the currency question; the tariff legislation; the trust problem; foreign relations; the Spanish-American War and its results; party politics; political dissent, and interpretations of democracy. Lectures, text-books and readings. (Offered in 1925-1926 and alternate years.) *Spring quarter.* Professor Pierson.

58. Contemporary American History. Continuation of History 57. A course dealing with the political, economic, social and diplomatic history of the United States from 1898-1920. Conservatism, moderation, and radicalism in politics and economics; social legislation; American imperialism and increased participation in international relations; the World War and the problems of peace. Lectures, text-books, and readings. (Offered in 1926-1927 and alternate years). *Spring quarter.* Professor Pierson.

59-60. History of North Carolina. General survey of colonization and territorial growth; colonial institutions; intercolonial and imperial relations, revolution and independence; constitutional and institutional development; Federal relations; Civil War and reconstruction; recent political, economic, and educational developments. Lectures and readings. *Winter and spring quarters.* Professor Connor.

63-64. The History of the West. A study of the westward movement of civilization and the receding frontier in the area now comprising the United States from the period of exploration and settlement to the opening of the 20th Century: the conditions and processes of migration into the various areas; and the social, economic, and political significance of the frontier. Lectures, readings, discussions, reports. *Winter and spring quarters.* Professor Newsome.

Courses for Graduates

100a-b-c. hf. North Carolina History. A seminar course on the social, economic, and political history of the State of North Carolina. The course continues throughout the year, a weekly conference being held for the presentation of reports and discussions. *Fall, winter, and spring quarters.* Professor Connor.

103a-b-c. hf. Inter-American Relations. Prerequisites, History 9 and 10 or 11. A research course concerned with the diplomatic relations of the United

States and the Hispanic-American countries. Some particular aspect will be selected for investigation. Lectures and reports. *Fall, winter, and spring quarters.* Professor Pierson.

106a-b-c. hf. The History of Congress. A seminar course devoted to the history of the development of the Congress of the United States. *Fall, winter, and spring quarters.* Professor Hamilton.

110a-b-c. hf. Ancient History. A seminar in some phase of Ancient History. *Fall, winter, and spring quarters.* Professor Caldwell.

113a-b-c. hf. Modern European History. A seminar in some phase of the Napoleonic period. *Fall, winter, and spring quarters.* Professor Higby.

Government

Courses for Graduates and Advanced Undergraduates

30. The Elements of Political Science. A general course in which a study is made of the principles of political science and of the important theories respecting the nature, origin, forms, and ends of the state and of government. An examination of the literature of the subject will be made, supplemented by students' reports on selected political theorists. Lectures, text-books, and readings. *Fall quarter.* Professor Pierson.

34. The Constitution of the United States. An elementary course in constitutional law, covering by means of lectures, text-book and cases the fundamental principles of constitutional interpretation, and practice in the United States. *Fall quarter.* Professor Hamilton.

35. The Government of England. The objective in this course is a practical knowledge of the English Government as it operates, just how it came to be what it is. Local, national and imperial aspects of England's governmental practice will receive attention. Resemblances and contrasts between her government and that of our own country will be pointed out for the practical lessons which the parallel supplies. Lectures and readings. *Spring quarter.* Professor Wagstaff.

38. American State Government. A course dealing with the origins, development, and methods of the state governments. In connection with the course will be a special study of the government of North Carolina. *Spring quarter.* Professor Connor.

39. International Law. A course devoted to the study of the law of nations. Particular attention will be given to the historical development of International Law as well as to its substantive content. Lectures, readings and reports on cases. *Winter quarter.* Professor Frazer.

Courses for Graduates

100a-b-c. American Political Theory. (Two courses credit.) A seminar course respecting the political philosophy that has been developed in the United States. In the fall quarter the political theory of the colonial period and the American Revolution will be studied; in the winter quarter attention will be given to the theories associated with the formation of the Constitution and its early interpretation, the nature of the Union, and the slavery dispute; in the spring quarter the political theory of the Civil War and the contemporary United States will be considered. Lectures, readings, and reports. *Fall, winter, and spring quarters.* Professor Pierson.

141. Seminar Course. Credit, 1 or 2 courses. A research course in a special field under the direction of a member of the Department.

DEPARTMENT OF LATIN

See page 40.

DEPARTMENT OF MATHEMATICS

ARCHIBALD HENDERSON, JOHN WAYNE LASLEY, JR., ALLEN WILSON HOBBS, Professors.
ARTHUR SIMEON WINSOR, Associate Professor.
EDWARD TANKARD BROWNE, Assistant Professor.

The subject of mathematics constitutes the foundation upon which the general subject of engineering, in its broader aspects, solidly rests. This is true of such subjects as electrical, chemical, and mining engineering; but more especially, all work in scientific design of structures and in civil engineering depends upon minute and detailed knowledge of mathematical laws and principles.

On the pedagogical side, many of the courses, in particular those in pure mathematics, are designed for the student purposing to become a teacher in the schools, or a professor in college or university. In the light of the advance of mathematical science, and the wide ramifications of the more modern branches, many courses are offered, to enable the student to specialize along a number of different lines. A group of courses permits specialization in the general subject of geometry; another group of courses deals with the broad division of analysis; a third grouping permits specialization in mechanics.

The Resources of the Department

In Phillips Hall, thoroughly modern in construction and adequate in equipment, are located the departments of Mathematics, Physics, Civil and Electrical Engineering, and Mechanical Drawing. This concentration of allied departments in a single building affords exceptional advantages. The lecture halls and seminar rooms, departmental offices convenient for consultation, well-equipped testing rooms and laboratories, and commodious, well-lighted quarters for students in drawing—all are found beneath a single roof. In this building is a group departmental library, rich in works in mathematics, pure and applied, physics, and engineering, civil and electrical.

The Requirements for Advanced Degrees

The courses in the major subject are to be selected from the courses enumerated and described below, reference being had to the particular degree sought. The courses may be grouped under the three main divisions: analysis, geometry, and mechanics. The grouping and order of the courses will be arranged by conference between professor and student, the controlling factors being the previous preparation and training of the student and the particular degree sought.

The courses in the minor subjects, as a rule, will be chosen from the general fields of the allied and related sciences, such as physics, astronomy, and engineering—civil, electrical, and chemical; however, if desired, all of the work may be done in the major subject.

For the candidate for an advanced degree, a working knowledge of French and German is desirable; indeed, in the case of the candidate for the degree of Doctor of Philosophy, such familiarity with French and German scientific terminology and facility in the reading of foreign journals, is virtually indispensable. Advanced work in the languages, in special cases, may be done as part of the requirement for the minor subject.

Courses of Study

A thorough course in the calculus is required for each of the courses listed below. The advanced undergraduate specalizing in mathematics, as well as the candidate for an advanced degree in mathematics, must elect Mathematics 4 and 5.

Courses for Graduates and Advanced Undergraduates

52. Elementary Projective Geometry. The fundamental notions of projective geometry, projection, section, perspectivity, etc. Both analytic and geometric methods are employed. Projective correspondence, involution and general projective relations between one-dimensional forms are studied. Prerequisite, Mathematics 5. *Fall quarter.* Professor Lasley.

53. Advanced Projective Geometry. General homogeneous coördinates, collineation, correlation, homology, projective correspondence between two-dimensional forms are studied. A projective theory of conics is developed, also the notions of line geometry. Prerequisite, Mathematics 52. *Winter quarter.* Professor Lasley.

54. Analytic Geometry of Space. Treats of the spatial relations from the analytic standpoint. Deals with quadric surfaces, envelopes, foci, quadriplanar and tetrahedral coördinates, developable surfaces, curves in space, curvature of surfaces, higher surfaces, etc. Prerequisite, Mathematics 5. *Spring quarter.* Professor Henderson.

56a-b-c. hf. Graphical Analysis. Alignment charts and empirical formulas. Prerequisite, Mathematics 5. *Fall, winter, and spring quarters.* Professor Winsor.

60. Dynamics. Differential equations of motion, equations of orbits, D'Alembert's principle, motion of a rigid body. Prerequisites, Mathematics 10 and 12. *Spring quarter.* Professor Hobbs.

61. Vector Analysis. A study of some of the general principles of mechanics in the language of vectors. Prerequisite, Mathematics 60. (Not given in 1925-1926.) Professor Hobbs.

62. Foundations of Geometry. A course designed to meet the needs of students experienced in mathematical thinking. A survey of the contributions of Pasch, Peano, Hilbert and their schools to our knowledge of the foundations of geometry. A study of the axioms, of systems of geometry, etc. Prerequisites, Mathematics 5 and 52. (Not given in 1925-1926.) Professor Henderson.

63. Euclid. A survey of the state of Greek Mathematics. Euclid and his forerunners. Euclid's contribution to the systemization of geometrical knowledge. A study of the "Elements." *Spring quarter.* Professor Henderson.

70. Advanced Differential Equations. Linear equations and equations of the second order, with geometrical and physical applications. Partial differential equations with classic types. *Winter quarter.* Professor Henderson.

Courses for Graduates

101. Theory of Functions of a Complex Variable. Complex numbers, differentiation and integration, conformal mapping, linear fractional transformations, single and multiple valued fractions. Prerequisite, Mathematics 10. Professor Henderson.

102. Higher Plane Curves. A course dealing with plane curves, particularly conics, cubics, and quartics; polarity; Plücker formulæ, curves of Hesse, Steiner, and Cayley; classification of cubics, intersections of curves, singularities of curves, unicursal curves. Prerequisite, Mathematics 10. *Spring quarter.* Professor Lasley.

104. Theory of Numbers. An elementary course in the study of the properties of the rational integers, including the study of the question of divisibility, greatest common divisor of two or more integers, solution of simple congruences, quadratic residues, quadratic reciprocity law, representation of integers by quadratic forms, equivalence of quadratic forms, etc. Prerequisite, Mathematics 10. *Fall quarter.* Professor Browne.

105. Differential Geometry. A study of the metric differential geometry of curves, surfaces and curves on surfaces, systems of curves defined by differential equations, surfaces given by two quadratic differential forms. Prerequisite, Mathematics 10 and 54. *Spring quarter.* Professor Lasley.

106. Introduction to the Theory of Relativity. In this course the essential features of the special and the general relativity theories of Einstein are set forth from the mathematical point of view. Particular study is made of the Lorentz transformation, the theory of tensors, the absolute differential calculus, and the three crucial tests of the theory. Prerequisites, Mathematics 5 and 12. *Winter quarter.* Professor Henderson.

107. Advanced Relativity Theory. Restricted relativity with applications to physical and electrical problems. General relativity and gravitation. Geodesics and curvature in space-time. Cosmological speculations as to a finite, unbounded universe. Theories of Einstein and DeSitter. *Spring quarter.* Professor Henderson.

108. Modern Higher Algebra. Polynomials and their fundamental properties, determinants, theory of linear dependence, linear equations, matrices, invariants, bilinear, and quadratic forms. Prerequisite, Mathematics 7. *Spring quarter.* Professor Browne.

109. Elements of Non-Euclidean Geometry. The subject is treated chronologically. The contributions of Bolyai, Lobatchewsky, Riemann, Cayley, Klein are studied, analyzed and compared. Prerequisite, Mathematics 52. *Fall quarter.* Professor Henderson.

110. Algebraic Invariants. An introduction to the non-symbolic theory of invariants of binary forms with applications to geometry, followed by an explanation of the symbolic notation of Clebsch with practice in its use. Based on Dickson's *Algebraic Invariants. Fall quarter.* Professor Browne.

115. Seminar. Reading and research in Mathematics conducted by members of the Department.

DEPARTMENT OF PHILOSOPHY

HENRY HORACE WILLIAMS, Professor.

S. MCCLELLAN BUTT, Assistant Professor.

Attention is called to the Graham Kenan Fellowship in Philosophy, which yields $1500 annually, and may be held by one person for several years. The Department will be interested in hearing from anyone who desires to pursue the study of Philosophy until some positive and lasting result is reached.

Courses for Graduates and Advanced Undergraduates

2. History of Philosophy. Greek and Medieval Philosophy. Prerequisite to course 3. *Fall quarter.* Professor Butt.

3. History of Philosophy. Modern Philosophy. Prerequisite, course 2. *Winter quarter.* Professor Butt.

10-11-12. hf. Logic. The aim of this course is to explore the conscious logical process as expressed in civilization. *Three hours a week, fall, winter, and spring quarters.* Professor Williams.

Courses for Graduates

101-102-103. hf. The Individual and the State. A study of political theory, with special reference to the underlying metaphysics and psychology. *Three hours a week, fall, winter, and spring quarters.* (Given in 1925-1926 and in alternate years.) Professor Butt.

105-106-107. The History of Ethics. The more important theories, from Plato to the present time, based upon a reading of the sources. Among the

writers studied are Plato, Aristotle, the Epicureans, the Stoics, Hobbes, Cudworth, the British Moralists of the eighteenth century, the Utilitarians, Spinoza, Kant, Hegel, Schopenhauer, and Green. *Three hours a week, fall, winter, and spring quarters.* (Alternates with 101-102-103; given in 1926-1927.) Professor Butt.

141. Seminar in Philosophy. Conducted by the Department. Hours and subject are arranged at the beginning of the year.

DEPARTMENT OF PHYSICS

ANDREW HENRY PATTERSON, OTTO STUHLMAN, JR., Professors.
EARLE KEITH PLYLER, Assistant Professor.

The Department of Physics is offering a cycle of courses which extends over a period of three years, the object of which is to provide a thorough knowledge of the underlying principles of the subject in its various ramifications. The aim is to present the subject in its modern aspect with sincerity and thoroughness, requiring at the same time sufficient work in the laboratory to provide the necessary first-hand contact with the material under consideration.

The student interested in allied fields will find here a group of subjects which will help him interpret his specialty and develop a broader point of view.

The department library is in possession of fairly complete files of all the leading journals, and the laboratories are equipped for research in light, infrared absorption and radiation, heat, and electron phenomena.

Courses for Graduates and Advanced Undergraduates

5. Heat and Thermodynamics. Prerequisites, Physics 1-2. *Winter quarter.* Professor Plyler.

6. Mechanics and Wave Motion. Lectures, problems and laboratory work. Prerequisites, Physics 1-2, Mathematics 4. (Offered in 1925-1926 and in alternate years). *Fall quarter.* Professor Stuhlman.

7. Modern Electrical Theory. Lectures and laboratory work; the electron theory, atomic structure, radioactivity, etc. Prerequisites, Physics 1-2, Chemistry 1. *Spring quarter.* Professor Patterson.

8. Advanced Electricity and Magnetism. An introduction to the mathematical treatment of these subjects. Prerequisites, Physics 1-2, Mathematics 4. (Offered in 1926-1927 and in alternate years). *Spring quarter.* Professor Stuhlman.

9. Optics. A treatment of the fundamental principles of geometrical and physical optics. Lectures, problems and laboratory work. Prerequisites, Physics 1-2. (Offered in 1925-1926 and in alternate years). *Winter quarter.* Professor Stuhlman.

12. hf. Advanced General Laboratory. Affords an opportunity for further training and experimental study not given in other courses. *Any quarter.* Professors Patterson, Stuhlman, or Plyler.

Courses for Graduates

115a-b. Atomic Structure. A critical survey of the experimental and theoretical evidence in various branches of physics for the present theories of the structure of atoms and molecules. A reading knowledge of German is required. Prerequisite, Physics 7 or its equivalent. *Any two consecutive quarters.* Professor Patterson.

116. Mathematical Theory of Electricity and Magnetism. General electrostatic theory; ideal electric fields; condensers with homogeneous and nonhomogeneous dielectrics; general laws of conduction; thermal effects; magnetostatic fields; electromagnetic phenomena; electric waves. Prerequisite, Mathematics 4 and 10. Professor Stuhlman.

117. Theory of Light. 1. Geometrical optics. 2. Physical optics. 3. Optical properties of crystals and metals. 4. Magnetic-optics and radiation. Reading knowledge of German is required. Prerequisites, Mathematics 4 and 10. Professor Stuhlman.

118. Theory of Relativity. A critical study of the experiments leading to the development of the theory of relativity; Einstein's work; study of contemporary articles on the subject. Reading knowledge of German is required. Prerequisites, Mathematics 4 and 10. Professor Patterson.

119. Theory of Heat. Conduction; change of state; radiation and temperature; kinetic theory of gases; thermodynamics. Professor Plyler.

141. Research. Intended for applicants for advanced degrees. Experimental work. Subject assigned or approved by the professor in charge. A reading knowledge of French and German is required. Professors Patterson, Stuhlman, and Plyler.

DEPARTMENT OF PSYCHOLOGY

JOHN FREDERICK DASHIELL, HARRY WOLVEN CRANE, Professors.

The emphasis of the work in the Department of Psychology is primarily along the lines of interest in the science for its own sake; and students who are interested in the subject as an independent natural science are given opportunity and coöperation in research. In addition, the demand on the part of other fields for definite and reliable knowledge of human nature, especially in the various professional schools, amounts to a call for coöperation from this department; and some of the instruction and research is shaped with a view to supplying such assistance to education, medicine, commerce, sociology, etc.

The department occupies half of the second floor and some of the basement of Peabody Building. The laboratory includes two large rooms, one of them partially subdivided, two small rooms, a dark room, and an animal room. With these are connected three suites of offices, a library, and class rooms. Sufficient equipment is at hand for the experimental work involved in the different courses offered; and apparatus and supplies are adequate for certain lines of special research, such as mental and physical measurements of all sorts, personality analysis, animal behavior, problems in learning and training, etc. The library includes all the psychological journals published in English and six or eight of those in French and German. The supply of books is fairly complete.

A member of the department is psychopathologist to the State Board of Charities and Public Welfare, supervising the mental examination of abnormal cases throughout the state; and the properly interested and qualified graduate student is given opportunities here. Psychological assistance is given by the department to educational interests in the state, especially on the sides of tests and measurements, mental hygiene, and problems in learning. It is hoped that resources will soon permit coöperation also with other lines of work in the state, particularly commercial and industrial.

The courses listed primarily for graduates are selected with the aim of providing such as will be intensive and extensive preparation in "pure" psychology. They are of a nature to be best fitted for those who wish to give themselves a thorough and sound purchase on psychology as their major subject as well as naturally to be recommended to students majoring in another

department. Interests in applied psychology in its varied forms—educational, economic, social, medical, etc.—are well met by many of the courses listed for graduates and advanced undergraduates. The research work will ordinarily be done in connection with courses 102-103.

Courses for Graduates and Advanced Undergraduates

Courses under this head may be taken by graduate students after consultation with the instructor and by special arrangement of the work.

22. The Psychology of Learning. An analysis of human training: its nature, means, and possibilities. A reading survey will be made of the outstanding experimental work on these lines. The aim will be to get an accurate and scientific notion of the subject, with possibilities of application to various fields of applied psychology, including education and industry. Readings, discussions, experiments. Prerequisite, Psychology 1 and 2. *Spring quarter.* Professor Dashiell.

25. Animal Psychology. Development of mind in the animal. Study of behavior as analyzable into tropisms, reflexes, instincts, habits, learning capacities, etc. Comparisons between different phyla of animals and between animals and man. Texts, lectures, and experiments. Prerequisite, Psychology 1 and 2. *Winter quarter.* Professor Dashiell.

26. Child Psychology. The development of behavior in the child. The chief subdivisions to be studied are the original behavior equipment, the growth and maturation of structure, the acquisition of habits, the development of capacity, and the formation of interests. Attention will be given to conflict of interests and mental hygiene. This course is the natural introduction to courses in educational psychology. Lectures, readings, and experiments with children. Prerequisite, Psychology 1 and 2. *Fall quarter.* Professor .....

30. Social Psychology. An introduction to the study of the individual in his social aspects and social behavior. The topics include social drives and habits, language, facial expression, group and crowd phenomena, and social conflict and adjustment. The latter part of the course will apply the laws of social psychology in the fields of sociology, economics, and other social sciences. Lectures, readings, and reports of current social phenomena. Prerequisite, Psychology 1 and 2. *Fall quarter.* Professor .....

35. Economic Psychology: Industrial and Vocational. There will be two main divisions of the course, as follows: (1) The adjustment of the worker to his work, including industrial training; effects of incentive, monotony, and fatigue: motion study; and mental hygiene in industry. (2) The selection of personnel for various kinds of work, with the industrial use of tests of intelligence and personality. An outline of vocational psychology will be given, and the psychology of salesmanship discussed. Lectures, experiments, readings. Prerequisite, Psychology 1 and 2. *Spring quarter.* Professor .....

36. Economic Psychology: Advertising. An attempt is made to present systematically those aspects of psychology that will aid the advertiser more effectively to construct and present his advertisements. While aiming to give information of practical value the emphasis is placed upon the establishing of a point of view that will be of assistance in the development of a general technique on the part of the advertiser. Prerequisite, Psychology 1 and 2. *Spring quarter.* Professor Crane.

45. Abnormal Psychology: Feeble-mindedness. Presentation of the psychoneural aspects of feeble-mindedness in general, and of the various types, together with their importance in relation to the problems of education, dependency, and delinquency. There will be discussion and demonstration of the various clinical methods of determination and classification of feeble-mindedness. Prerequisite, Psychology 1 and 2. (Offered in 1925-1926 and in alternate years.) *Winter quarter.* Professor Crane.

46. Abnormal Psychology: Psychoneuroses and Psychoses. A study is made of the more important deviations from the normally reacting and experiencing human organism. Attention is given to the sensory, imaginal, emotional, motor, etc., abnormalities and to the occurrence of these in the various psychoses. Brief surveys are given of the methods of clinical psychology and of psychotherapy. Prerequisite, Psychology 1 and 2. *Spring quarter.* Professor Crane.

47. Abnormal Psychology: Mental Examination Methods. A presentation of the various psychological methods used in the clinical study of individuals. This will include a study of the methods used in the determination of the presence or absence of specialized defects and in the determination of the level of general intelligence. Prerequisite, Psychology 1 and 2. (Offered in 1926-1927 and in alternate years.) *Winter quarter.* Professor Crane.

Courses for Graduates

101. Advanced Experimental Psychology. A training course in the technique of psychological experimentation and research, to acquaint the student both with methods and with typical forms of apparatus. A survey will be made of the experimental study of the various motor, sensory, thinking, and emotional functions, including both introspective and behavioristic approaches. *Fall quarter.* Professor Dashiell.

102-103. Research in Psychology. Opportunity will be given for the experimental investigation of special problems along the line of the individual student's interests. The personal and material resources of the departments are here especially offered. *Winter and spring quarters.* Professors Dashiell, Crane, and _____.

105. Physiological Psychology. An intensive study is made of the field of psychology, with emphasis placed upon the neural mechanism as a basis for understanding both the mental and reaction phenomena of psychology. *Fall quarter.* Professor Crane.

106. Contemporary Psychological Tendencies. A more or less systematic survey of the more outstanding recent and contemporary movements in modern psychology. Readings assigned in the works of Wundt and Titchener, James, Hall, McDougall and Stout, Thorndike, Pavlov, Watson, Cannon, Freud and Jung, and perhaps others. *Spring quarter.* Professor Dashiell.

107. The Psychology of Personality. This course defines personality as the aggregate of persistent behavior traits. The method of approach is dynamic and causal. Inheritance of capacities, dispositions, and defects, genetic development, and psychoanalytical method will be given special attention. The fundamental traits will be classified and studied by reference to case material. Types, or trait-patterns, will be discussed. Insight into the hygiene and improvement of the personality will be the practical aim of the course. Readings, discussions, analyses of cases. *Winter quarter.* Professor _____.

(The student is also referred to courses in Educational Psychology offered by Professors Jordan and Trabue in the School of Education, Nos. 43, 64, 110, and in Neurology offered by Professor Mangum in the School of Medicine, Anatomy 6.)

DEPARTMENT OF ROMANCE LANGUAGES

WILLIAM MORTON DEY, OLIVER TOWLES, STURGIS ELLENO LEAVITT, Professors.
HENRY DEXTER LEARNED, HOWARD RUSSELL HUSE, ALBERT A. SHAPIRO, Associate Professors.
NICHOLSON BARNEY ADAMS, ROBERT IRVING LITTLE, Assistant Professors.

The collection of books in the Romance Seminar Room in the University Library contains a fair amount of material for graduate courses in French and Spanish literature. A representative collection has recently been acquired and

the department is receiving important scholarly journals from South America. In Old French philology and literature the facilities are increasing, especially in collections of texts. The library carries subscriptions for the leading journals devoted to Romance literature and philology, such as *Romania, Revue de philologie française, Revue des langues romanes, Zeitschrift für romanische Philologie, Revue d'histoire littéraire de la France, Revista de filologia española, Revista contemporánea, Romanic Review, Revue hispanique, Modern Philology, etc.*

Requirements for the Degree of Master of Arts

The general requirements for the degree are stated elsewhere in this Bulletin. The special requirements in Romance Languages are as follows:

(a) A knowledge of Latin is required, and a reading knowledge of German is most desirable, as preparation for the graduate courses offered.

(b) Preliminary Courses. To become a candidate for the degree, the student must have passed satisfactorily courses 1-6 (see general catalogue of the University), and must have an acquaintance with the literature of the language specialized in equivalent to two courses from the group "Courses for Graduates and Advanced Undergraduates."

(c) Courses leading to the degree. Not less than nine courses must be taken in residence at this University, at least six of which must be in the field of Romance Languages.

FRENCH

Courses for Graduates and Advanced Undergraduates

11. French Literature of the Seventeenth Century. A study of French classicism with special reference to the drama. Plays of Corneille, Molière and Racine. Prerequisite, French 6. *Fall quarter.* Professor Little.

12. French Literature of the Seventeenth Century. This course will deal particularly with non-dramatic literature. Malherbe, Descartes, Pascal, Boileau, Bossuet, La Fontaine, and La Bruyère. Prerequisite, French 6. *Winter quarter.* Professor Towles.

13. French Literature of the Eighteenth Century. Voltaire, Montesquieu, Rousseau, les Encyclopédistes. A study of the literary movement of the century and of the origins of Romanticism. Prerequisite, French 6. *Fall quarter.* Professor Huse.

14. French Phonetics. A detailed study of the French vowel and consonant sounds by the phonetic method. This course is required of candidates for the master's degree, and it should be elected by anyone who intends to teach French. Prerequisite, French 5. *Fall quarter.* Professor Dey.

15. The French Romantic Movement. French Literature from 1800 to 1850, with special stress on the works of the romantic poets, Lamartine, Hugo, Vigny, and Musset. Lectures, reading, reports. Prerequisite, French 6. *Fall quarter.* Professor Dey.

16. French Literature Since 1850. A study of the later literary movements of the Nineteenth Century, with some emphasis on the contemporary period. Lectures, reading, reports. Prerequisite, French 6. *Winter quarter.* Professor Dey.

18. French Drama. A rapid survey of the French drama from the beginning to the 19th century. Prerequisite, French 6. *Winter quarter.* Professor Little.

19. The French Novel. A study of the development of the novel in France. Lectures, reading, reports. Prerequisite, French 6. *Winter quarter.* (Given in 1924-1925 and in alternate years.) Professor Dey.

24. French Poetry. A study of French lyric poetry, beginning with Villon. Prerequisite, French 6. *Spring quarter.* Professor Huse.

Courses for Graduates

101. Studies in Romanticism. Seminar Course. Intensive study of one of the romantic poets. Prerequisite, French 15. *Winter quarter.* (Offered in 1925-1926 and in alternate years). Professor Dey.

105-106. The Sixteenth Century. A study of the French Renaissance. Italian and French Humanism. The Reformation. Marot, Rabelais, Calvin, the Pléiade, Montaigne. *Double Course. Winter and spring quarters.* Professor Towles.

121a-b-c. Old French. Reading of the oldest texts: La Chanson de Roland; Aucassin et Nicolette; Chrétien de Troyes. Lectures on French Phonology and Morphology. *Three hours a week. Two courses.* Professor Learned.

125. Provençal. A study of the ancient language and literature of Provence. The poetry of the Troubadours. *Spring quarter.* (Given in 1924-1925 and in alternate years). Professor Dey.

131. Introduction to Linguistic Science. Vowel measurements. Phonetic alphabets. Special attention to the pronunciation of French. *Spring quarter.* Professor Dey.

141. Research in a special field under the direction of a member of the department.

SPANISH

Courses for Graduates and Advanced Undergraduates

11-12. Spanish Drama of the Siglo de Oro. Earlier dramatists, representative plays of Lope de Vega, Tirso de Molina, Calderón, Ruiz de Alarcón, etc. Lectures and reports. Prerequisite, Spanish 6. *Double Course. Fall and winter quarters.* (Offered in 1925-1926 and in alternate years). Professor Leavitt.

17. Spanish Drama of the Nineteenth Century. Reading of representative plays of this period. Lectures, oral and written reports. Prerequisite, Spanish 6. (Given in 1924-1925 and in alternate years). *Fall quarter.* Professor Leavitt.

18. Modern Spanish Drama. Reading of plays of Dicenta, Benavente, Linares Rivas, the Alvarez Quintero brothers, Marquina, Martinez Sierra, etc. Lectures, oral and written reports. Prerequisite, Spanish 6. (Given in 1924-1925 and in alternate years). *Winter quarter.* Professor Leavitt.

19-20. The Spanish Novel. A study of the development of the novel in Spain. Double Course. *Fall and winter quarters.* (Offered in 1924-1925 and in alternate years). Professor Adams.

21. Modern Spanish Novelists. Consideration of present tendencies and intensive study of one representative author. *Spring quarter.* Professor Adams.

Courses for Graduates

121-122. Early Spanish. Ford's *Old Spanish Readings.* The Poem of the Cid. Spanish Literature to the Sixteenth Century. *Double Course. Fall and winter quarters.* Professor Shapiro.

123. Early Spanish Literature. Seminar Course. Intensive study of one representative author of this period. Prerequisite, Spanish 121-122. *Spring quarter.* Professor Shapiro.

131-132. Introduction to Spanish-American Literature. A study of notable authors and consideration of present-day writers. *Double Course. Fall and winter quarters.* Professor Leavitt.

141. Research in a special field under the direction of a member of the department.

Italian

Courses for Graduates and Advanced Undergraduates

11. Italian Literature of the Renaissance. Reading from the principal authors, with special emphasis on Ariosto, Machiavelli, Castiglione, and the lyric poets. Collateral reading on the history of Italian culture during the Renaissance. Prerequisite, Italian 1-2. *Winter quarter.* Professor Huse.

DEPARTMEENT OF RURAL SOCIAL-ECONOMICS

Eugene Cunningham Branson, Professor.

Samuel Huntington Hobbs, Jr., Associate Professor.

The seminar library of the Department of Rural Social-Economics is perhaps the best seminar library of its sort in the United States, particularly in county government, rail-and-water transportation, the country church, farm tenancy, and state-aid to land ownership. It is well equipped with the rare literature of its special field of learning, with standard texts and reference volumes, current reports, bulletins, pamphlets, journals, magazines and newspaper clippings, and the like. It is also a clearing house of information about North Carolina, economic, social, and civic-rural, industrial, and urban. The files of mounted clippings in Rural-Social-Economic-Civic subjects are indexed in accord with the index system of the general library.

Publications of the Department consist of two volumes published by the University Press, namely, *Agricultural Graphics: North Carolina and the United States, 1866-1922,* by Henrietta R. Smedes; and *Country Life Studies Abroad in 1923-1924,* by E. C. Branson; three county survey bulletins of Buncombe, Forsyth and Randolph counties, covering the present day economic-social-civic concerns of these counties; the North Carolina Club Year Book for 1923-24 on *What Next in North Carolina,* containing 15 particular studies of state-wide problems; fifty numbers of the University News Letter, which, for this the eleventh year, is filled with particular economic-social-civic studies of county and State affairs.

Courses for Graduates and Advanced Undergraduates

20. Lecture and Research Course in North Carolina. This course is designed to familiarize the student with North Carolina: population, agriculture, resources, social life, economic development, industry. *Fall quarter.* Professor Hobbs.

Courses for Graduates

105a-b-c. Rural Social Problems, Agencies and Institutions. Professor Branson.

113a-b-c. Rural Economics. Research, seminars, and field investigations in (1) land economics—resources, values, ownership and tenancy, laws and policies; (2) farm organization and management—farm systems, farm finance, distribution of farm products and the farm income, coöperative farm enterprise: (2) country wealth and country institutions, country home comforts and conveniences, etc.; (4) state and county studies, economic, social, and civic; county bulletins, etc. Required preliminary preparation: approved courses in general and agricultural economics. Students lacking such preparation must take collateral courses in these subjects in residence here. *Fall, winter, and spring quarters.* Professor Branson.

117a-b-c. Rural Social Problems. 1. Research, seminars, and field investigations of (1) rural institutions and agencies; (2) transportation and communication facilities in rural areas; (3) country-mindedness and its consequences; (4) town and country interdependencies; (5) social disability in country areas, our public welfare laws and agencies; (6) social aspects of tenancy and illiteracy;

(7) state and county studies, economic, social, and civic; county bulletins, etc. 2. Rural Social Surveys. Research, technic and field work. 3. Statistics. Interpretation and use. 4. Rural Social Engineering. (1) Country community studies; (2) Community organization, economic and social. (3) County government. (4) Country leadership, requisites and technic. Required preliminary preparation: approved courses in general and rural sociology, or collateral courses in these subjects taken in residence here. *Fall, winter, and spring quarters.* Professors Branson and Hobbs.

DEPARTMENT OF SOCIOLOGY

HOWARD W. ODUM and JESSE F. STEINER, Professors.
HAROLD D. MEYER, Associate Professor.
*WILEY B. SANDERS, Assistant Professor.

The work in sociology in the University is organized around the Department of Sociology and the School of Public Welfare. For complete announcement of all courses and details concerning the school, see the special bulletin of announcements issued in January.

To meet the specific needs of the state and the University, and to some extent the South, a four-fold service has been planned. The first emphasizes instruction in sociology and social problems, including teaching in the College and University, extension teaching through the Bureau of Extension or outside communities, and through general instruction and promotion of citizenship. The second emphasizes training for social work and community leadership, with special reference to town, village, and rural communities, and with special application to the state of North Carolina and the South. This division hopes to meet the very urgent demands of the state for trained men and women for its county superintendents of public welfare and other official positions, and of many communities throughout the South for Red Cross secretaries and other community workers in the mill villages and elsewhere. The third aspect of the work emphasizes direct and indirect community service, or social engineering through avenues of community leaders, county superintendents of public welfare, local and district conferences, and community planning for leaders, industrial managers and others. The fourth aspect emphasizes social research, scientific inquiry, and publication of results estimated to be of value to the state, the University, and to the general field of public welfare and social progress. A fifth general purpose, kept constantly in the foreground, provides that the school maintain close and cordial coöperation with the State Department of Public Welfare, with other state departments of public service, with other departments and schools of the University, and with local and national voluntary agencies.

The Department of Sociology, as do those in Economics, Government, Rural Social Economics, and Education, works in close coöperation with the Institute for Research in Social Science, attempting to select the most important topics for fruitful research, to find available students to do the research, and to direct its progress. Among the subjects for special research this year are a half dozen inquiries into social-industrial relationships, such as the social studies in the mill village, the mill village as an example of social evolution and community process, the religious factor in the industrial community, and the general social and economic development of southern mill villages. Other topics relate to rural leadership, to leadership in the South, to rural vocational guidance, to the small town and village, to the reading habits of southern folk, race progress in the South, changing social emphasis as reflected by the newspaper, studies in community organization, in poor relief, in juvenile delinquency, in public welfare, and special studies in the administration of child welfare.

* Absent on leave, 1924-1925.

Courses for Graduates and Advanced Undergraduates

2. Principles of Sociology. An advanced course open to Juniors and Seniors and graduates, dealing with the fundamental concepts of sociology with special reference to their application to the problems of collective behavior. Among the topics discussed are human nature, isolation, social contacts, social interaction, social forces, conflict, accommodation, social control, and social progress. *Winter or spring quarter.* Professor Steiner.

5. Negro Problems. A study of the race problems of the South, with consideration of the history, economic and social status, and future of the negro. Standards of measurement for race progress; race relationships; the specific problems of the here and now of Southern race relations. *Seminar course. Fall quarter.* Professor Odum.

6. hf. Problems of Immigration. The essential problems of immigration in this country—history and analysis of immigration, restriction, adaptation, Americanization. Special problems of immigration in relation to industrial and social unrest and development. *Winter quarter.* Professor Steiner.

7. Problems of the Small Town and Mill Village. The romance of the small town, its place in the American commonwealth, relationship to this state, town planning, mill village, its social and industrial problems, special studies of selected towns. *Spring quarter.* Professor Odum.

8. Community Organization. The community as a unit of work, problems of modern community life, principles underlying community organization, experiments in methods of community organization, development and coördination of community activities illustrated by case records, problems of community leadership. *Fall quarter.* Professor Steiner.

9. Community Organization. A continuation of Sociology 8 with special attention given to current examples and methods of community organization in this and other countries. *The Community Council. Winter or spring quarters.* Professor Steiner.

11. The Family. Early forms of the family in primitive society; its historical development during Greek, Roman and mediæval periods. The modern family and its problems. *Fall quarter.* Professor Steiner.

12. Crime and Its Social Treatment. Nature and causes of crime, evolution of modern methods of criminal procedure, administration of penal and reformatory institutions, programs for the social treatment of the criminal, the problems of juvenile delinquency. *Winter quarter.* Professor Steiner.

13. Social Pathology. A study of the abnormal and pathological aspects of social life, problems of dependency and degeneracy and methods of care and treatment of dependent and defective classes. *Spring quarter.* Professor Steiner.

14. Family Case Work. Discussion of the relation of the individual to the family and the family to the community. The technique of case work and its scientific approach, methods of investigation, interviewing, social evidence, sources, diagnosis, relief. *Fall and winter quarters.* Professor Steiner.

15. Family Case Work. A continuation of sociology 14, with more intensive study of case records. *Winter quarter.* Professor Steiner.

20. The Principles of Field Work. The study and demonstration of field work as a standard laboratory course in social science. Fourteen hours a week required of all who major in community work. *Fall quarter.* Professor Sanders.

21. Field Work and Community Surveys. Planning for community recreation. Special days, special programs for communities, map-drawing and surveys, community fairs. *Winter quarter.* Professor Steiner.

24. The Philosophy of Play. A study of play instincts, the relation of play to physical growth, to mental, social and moral developments, theories of play, social significance in modern times. To be taken with Sociology 20 and 21. *Winter quarter.* Professor Meyer.

Courses for Graduates

121. The Principles of Sociology. A graduate seminar in the study of advanced social theory and research into some special social problem. *Fall quarter.* Professor Odum.

122. Educational Sociology. An advanced course in the study of scientific programs of social progress. Objective measurement of social influences and social groups. Research into some specific problem relating to one of the larger institutions. *Winter and summer quarters.* Professor Odum.

123. Historical Sociology. A study of the leading social theorists and their contribution to human thought and welfare. Research into the theories of some selected writer. *Spring quarter.* Professor Odum.

124. Poverty and Relief. A research seminar on the social treatment of the dependent in society. One special topic selected for research, as the County Home. *Fall quarter.* Professor Steiner.

125. National Agencies for Public Service. A graduate seminar in the study of state and national agencies, both public and private, for the administration of relief. *Winter quarter.* Professor Steiner.

126. Community Organization. An advanced course following Sociology 8. Intensive study of special movements and new theory and practice in community organization and leadership. *Spring quarter.* Professor Steiner.

127-128-129. Research in a special field under the direction of Professor Odum. *Throughout the year.*

130-131-132. Research in a special field under the direction of Professor Steiner. *Throughout the year.*

DEPARTMENT OF ZOOLOGY

HENRY VAN PETERS WILSON, ROBERT ERVIN COKER, Professors.

Those who find themselves strongly interested in zoölogy will meet with opportunities for teaching and investigating in several of the subdivisions of present-day universities, such as college, technological, medical, and graduate school. Others will find their best opportunity, especially if their interest centers around the fundamental problems of cellular biology, in research institutions of a more or less medical character. Museums need the service of many zoölogists as curators. Such persons are expected to acquire intimate and extensive knowledge of the classification and natural history of some particular group. Somewhat the same kind of specialization is demanded of those who are drawn into institutions for the betterment of public health, some concentrating on the study of protozoa, others on the insects that spread disease, others on the parasitic worms, etc. There is, finally, much work of an economic nature that is carried on by zoölogists in the service of national and state bureaus, such as the U. S. Bureau of Fisheries and the several bureaus under the U. S. Department of Agriculture.

The department occupies, along with the Department of Botany, the Biological Building known as Davie Hall, a description of which is contained in the University catalogue. The equipment of the department in books, journals, collections, and instruments will be found adequate to the needs of graduate work. Opportunity to carry on investigations at the seaside may usually be obtained during the summer at the Biological Station of the U. S. Bureau of Fisheries situated at Beaufort, N. C.

In Zoölogy the laboratory is provided with the usual equipment for graduate work including excellent photographic apparatus. The departmental library receives the American and many of the foreign journals. It has a good working collection of treatises and monographs and a large collection of reprints. The department is prepared to direct research on the general problems of cellular biology as presented in the embryological and regenerative processes of animals, more especially the lower metazoa (sponges and coelenterates) and lower vertebrates (fishes and amphibia); on the ecology of lower aquatic animals; and on the phenomena of variation as exemplified in the classification of sponges. Investigations along these lines have now been carried on for many years. The published records have appeared from time to time in the zoölogical journals (*Journal of Morphology, Journal of Experimental Zoölogy, Memoirs Museum Comparative Zoölogy, Bulletin U. S. Bureau of Fisheries, Bulletin U. S. National Museum, Anatomischer Anzeiger, Journal Elisha Mitchell Scientific Society, American Naturalist,* etc.), and the chief data have been incorporated in treatises that are in general use.

The courses listed below are such as lead more especially to the master's degree (M.A. or M.S.). For the Ph.D. degree the essential requirement is that the candidate shall have such a grasp of the concepts and methods of zoölogy as will enable him independently to acquire knowledge of some importance that is new to science. This depends not only on manipulative skill and experience but also on ability to handle the literature of the subject, the treatises, hand-books, and especially the current journals. A reading knowledge of French and German is necessary.

Courses for Graduates and Advanced Undergraduates

3. Comparative Anatomy of Vertebrates. Dissection of types, especially amphioxus, petromyzon, fish, fowl, rabbit. Laboratory work with occasional lectures. *Fall quarter.* Professor Wilson.

4. Comparative Embryology of Vertebrates. Maturation and fertilization phenomena in some invertebrate types; segmentation and formation of germ layers in frog and teleost fish; germ layers and development of characteristic vertebrate organs in chick; essentials of microscopic technique. Laboratory work with occasional lectures. *Winter quarter.* Professor Wilson.

5. Comparative Histology of Vertebrates. Microscopic preparation of selected tissues and organs are made from the fresh animal, and studied with the help of texts. Laboratory work with assigned reading. Prerequisite, Zoölogy 4. *Spring quarter.* Professor Wilson.

6-7-8. hf. Morphology and Classification of the Invertebrates. Dissection and microscopic study of types of the chief orders, with some consideration of life-histories; systematic diagnosis. Laboratory work with occasional lectures. *Fall, winter, and spring quarters.* Professor Wilson.

9. Hydrobiology. A study of animal life in ponds and streams, with special reference to the relations of animals to each other and to their environments. Field and laboratory work, lectures, reading of special papers, discussion. Prerequisite, Zoölogy 2 (b.) *Fall or spring quarter.* Professor Coker.

Courses for Graduates

109-110-111. Embryology and Regeneration in the lower metazoa and simpler vertebrates. *Triple Course.* (Work of any quarter may be extended beyond this limit.) *Fall, winter, and spring quarters.* Professor Wilson.

112. Research in a special field, under direction of Professor Wilson or Professor Coker. Designed especially for candidates for the master's degree. *Whole or half course. Spring quarter.*

REGISTER OF STUDENTS, 1924-1925

[NOTE: No distinction is made in this list between admission to the Graduate School and admission to candidacy for a degree. The symbol "S" indicates registration for the summer term.]

ABERNETHY, FRED ..... Lincolnton
A.B., Lenoir-Rhyne College, 1924. S. *Education*

ABERNETHY, JOHN REAGAN ..... Mooresville
A.B., Trinity College, 1924. Fellow in Mathematics. First year. *Mathematics*

ABERNETHY, MARY WINN ..... Leaksville
A.B., North Carolina College for Women, 1920. S. *English*

ADAMS, AGATHA BOYD ..... Chapel Hill
A.B., Randolph-Macon Woman's College (Va.), 1915. First year. *Spanish*

ADAMS, RAYMOND WILLIAM ..... Elgin, Ill.
A.B., Beloit College (Wis.), 1920. *English*
A.M., 1921. Fifth year.

ADAMS, ROBEY WASHINGTON ..... Four Oaks
A.B., Trinity College, 1916. S. *Education, English*

ALBERGOTTI, JULIAN SHEPARD ..... Blacksburg, S. C.
B.S., The Citadel (S.C.), 1924. First year. *Civil Engineering*

ALEXANDER, CLAYTON BROWN ..... Matthews
A.B., Davidson College, 1919. *History, Government*
A.M., 1923. S.

ALLEN, JESSIE ESTELLE ..... St. Pauls
A.B., Meredith College, 1923. S. *French, German*

ALLEN, SALLIE ..... Warrenton
A.B., 1922. S. *Latin, English*

ANDERSON, DAISY LOUISE ..... Mars Hill
A.B., North Carolina College for Women, 1923. S. *Education*

ANDREWS, NITA ..... Chapel Hill
A.B., North Carolina College for Women, 1919. S. *Education, History*

ANSCOMBE, FRANCIS CHARLES ..... Chapel Hill
A.B., Earlham College (Ind.), 1916. *History, Government*
A.M., 1924. Second year.

ARIAIL, JAMES MILTON ..... Columbia, S. C
A.B., Wofford College (S.C.), 1905. *English*
A.M., *ibid.*, 1906.
A.M., 1924. Second year.

ARROWOOD, FRED MONROE ..... Fremont
A.B., 1921. S. *Education*

ATKINSON, MINNIE ..... Mullins, S. C.
Ph.B., Elon College, 1919. Second year. *Education*

AUSTIN, LUCY ESTELLE ..... Taylorsville
A.B., Elon College, 1924. S. *Latin, English*

AXLEY, LOWRY ..... Savannah, Ga.
A.B., 1913. S. *English, Education*

BAILEY, JAMES OSLER ..... Raleigh
A.B., 1924. S. *English, Education*

BAIN, TERRY REID ..... Dunn
A.B., Wake Forest College, 1922. S. *English, Education*

BALLARD, ARTHUR STAMEY ..... Bessemer City
A.B., Wake Forest College, 1914. S. *Education*

BAREFOOT, WILLIAM JEFFERSON ..... Benson
A.B., 1922. S. *History*

BARNES, WILLIAM BRADDY ..... Lucama
A.B., 1917. S. *History*

BARNETTE, WALKER ..... Huntersville
A.B., 1924. Second year. *History, Government*

BARNHARDT, LUTHER WESLEY ..... Concord
A.B., Trinity College, 1921. *History, Economics*
A.M., University of Wisconsin, 1922. S.

BEARD, PALMER DALE ..... Matthews
A.B., Erskine College (S. C.), 1921. S. *Education, Sociology*

BEAVERS, GEORGE MONROE ..... Apex
A.B., Wake Forest College, 1898. *Education*

BENSON, CHASE HOWARD ..... Swan Quarter
A.B., Trinity College, 1921. *Mathematics*
A.M., 1924. Second year.

BILLINGS, CHARLES MOORE, JR. ..... Rich Square
A.B., Wake Forest College, 1923. S. *Education, English*

BIRD, WILLIAM ERNEST ..... Whittier
A.B., 1917. *English, Education*
A.M., George Peabody College for Teachers (Tenn.), 1920. First year.

BLACKWELL, REECE CROXTON ..... Jefferson, S. C.
A.B., Furman University (S.C.), 1924. S. *Mathematics, Physics*

BLANCHARD, HAROLD BRADFORD ..... Chapel Hill
A.B., Boston University (Mass.), 1914. First year. *Education*

BOST, CURTIS CLEGG ..... Matthews
B.S., Kansas State Agricultural School, 1922. S. *Economics, Education*

BOST, RALPH WALTON ..... Rockwell
A.B., Newberry College (S.C.), 1923. *Chemistry*
A.M., 1924. S.

BOSWELL, MARTHA PAULINE GASH ..... Brevard
A.B., Randolph-Macon Woman's College (Va.), 1914. First year. *English*

BOWMAN, JOSEPH ORLANDO ..... Chapel Hill
B.S., Berea College (Ky.), 1914. S. *Education*

BOYETT, CLENON FESTUS ..... Garland
A.B., 1918. S. *Education*

BOYETTE, EDGAR THOMAS ..... Princeton
A.B., Wake Forest College, 1922. S. *Education*

BOYSWORTH, MABEL FRANCES ..... Norwood
A.B., North Carolina College for Women, 1920. First year. *Sociology, History*

BRADY, CORNELIA ..... Wilmington
B.Ed., North Carolina College for Women, 1918. S. *Education, English*

BRAGDON, JOSEPH THOMAS ..... Manning, S. C.
B.S., The Citadel (S. C.), 1923. S. *History, English*

BRANDON, WILLIAM PEW ..... Dublin, Ga.
A.B., Emory University (Ga.), 1922. Fellow in History and Government. First year. *History*

BRANDT, BARTHOLOMEW BRANDNER ..... Washington
B.S., Mississippi A. and M. College, 1917. S. *Education, Chemistry*

BREARLEY, HARRINGTON COOPER ..... Durham
A.B., University of South Carolina, 1916.
A.M., *ibid.*, 1917. S. *Sociology, Psychology*

BRIDGER, EVELYN BARRETT ..... Dunn
A.B., Meredith College, 1921. S. *English*

BRIGGS, DAVID HEZEKIAH ..... Marshall
A.B., Maryville College (Tenn.), 1919.
A.M., 1924. Second year. *Education*

BRINSON, LLOYD THOMPSON ..... New Bern
A.B., Atlantic Christian College, 1923. S. *Education*

BRINSON, ZEB ..... Arapahoe
A.B., Atlantic Christian College, 1923. S. *Education*

BROOKS, FREDERICK PHILIPS ..... Chapel Hill
B.S., 1921.
M.S., 1922. Third year. *Chemistry*

BROWN, CECIL KENNETH ..... Cleveland
A.B., Davidson College, 1921.
A.M., 1923. S. *Economics*

BROWN, ROY EUGENE ..... Chapel Hill
A.B., 1923. Second year. *Sociology, History*

BROWN, SUSIE PERSONS ..... Fort Valley, Ga.
A.B., Wesleyan College (Ga.), 1914. S. *Romance Languages*

BRUTON, GASTON SWINDELL ..... Newport
A.B., 1923.
A.M., 1924. S. *Mathematics, Education*

BRYSON, HERMAN JENNINGS ..... West Asheville
A.B., 1923. *Geology*
A.M., 1924. Fellow in Geology. Second year.

BUCKNER, CANEY EDWARD ..... Durham
A.B., Trinity College, 1921. *History*
A.M., *ibid.*, 1924. First year.

BULLOCK, AUGUSTUS RUFUS ..... Stem
A.B., 1921. S. *Education*

BUSH, KATHRINA ..... Macon, Ga.
A.B., Wesleyan College (Ga.), 1920. S. *English*

BYNUM, JEFFERSON C. ..... Chapel Hill
B.S., 1919. First year. *Geology*

BYRD, HOWARD MATTHEW ..... Graniteville, S. C.
A.B., Presbyterian College of South Carolina, 1914. S. *History*

BYRD, RALPH MILLEDGE ..... Edgefield, S. C.
B.S., The Citadel (S. C.), 1923. First year. *Chemistry*

CANTEY, HARRY, JR. ..... Columbia, S. C.
B.S., The Citadel (S. C.), 1924. First year. *Civil Engineering*

CARR, ISAAC NEWTON ..... Mars Hill
A.B., Carson-Newman College (Tenn.), 1916. *History*
A.M., *ibid.*, 1918. First year.

CARR, JOHN RICHARD ..... West Jefferson
A.B., Carson-Newman College (Tenn.), 1922. S. *Education, History*

CARR, MITCHELL ..... Micaville
A.B., Carson-Newman College (Tenn.), 1923. S. *English*

CARRINGTON, GEORGE LUNSFORD ..... Durham
A.B., 1913. *Medicine*
A.M., Trinity College, 1916.
M.D., Johns Hopkins University (Md.), 1920. First year.

CARSON, BOYCE GALLOWAY ..... Kings Mountain
A.B., 1924. First year. *Chemistry, Physics*

CARTER, EMERSON LEROY ..... Hickory
A.B., 1922. S. *English*

CARTER, HENRY WINFIELD ..... Bryson City
A.B., Trinity College, 1920. S. *Education*

CHEEK, THOMAS SHIELDS ..... Mebane
Ph.B., Elon College, 1922. S. *Sociology*

COBB, WILLIAM BATTLE ..... Baton Rouge, La.
A.B., 1912. *Geology*
A.M., 1913. S.

COLLINS, ADDISON BOYCE ..... Peachland
A.B., 1924. S. *Education*

COLLINS, SAMUEL CORNETTE ..... Portland, Tenn.
B.S., University of Tennessee, 1920. *Chemistry*
M.S., *ibid.*, 1924. First year.

COOK, HENRY WINSTON ..... Walnut
A.B., Tusculum College (Tenn.), 1918. S. *Education*

COON, MARY LOIS ..... Lincolnton
A.B., Lenoir College, 1922. S. *English*

COWPER, MARY O. ..... Durham
A.B., Drury College (Mo.), 1906. *Sociology*
A.M., *ibid.*, 1908.
A.M., Kansas University, 1914. First year.

COX, CORDELIA ..... Marion, Va.
A.B., College of William and Mary (Va.), 1922. First year. *Sociology*

COX, JOHN WILLIAM ..... Selma
B.E., North Carolina State College, 1915. *Education, Mathematics*
C.E., *ibid.*, 1921. S.

CRAIG, MRS. WILLIAM GILBERT ..... Chapel Hill
A.B., Greensboro College, 1917. First year. *Education, History*

CRISSMAN, CURTIS ..... Battleboro
A.B., 1918. S. *Education*

CROCKFORD, HORACE DOWNS ..... Chapel Hill
B.S., North Carolina State College, 1920. *Chemistry, Physics, Mathematics*
M.S., 1923. Fourth year.

CROUCH, LETTIE ELIZABETH ..... Mayodan
A.B., Salem College, 1914. S. *Education, Sociology*

CRUTCHFIELD, KENNETH HOLMES ..... Thomasville
A.B., Wake Forest College, 1921. S. *Chemistry, Education*

CUTLAR, LILLIE FIELDING POISSON ..... Winston-Salem
B.S., 1923. First year. *Chemistry*

DAVEY, LILA MABEL ..... Thomson, Ga.
A.B., Bessie Tift College (Ga.), 1920. S. *English*

DAVIS, ROBERT ALEXANDER, JR. ..... Stovall
A.B., 1922. *Education*
A.M., 1923. S.

DEAL, ERNEST ..... Dealville
A.B., Lenoir College, 1922. S. *Education*

DEARSTYNE, ROY STYRING ..... Raleigh
B.S., University of Maryland, 1916. *Sanitary Engineering*
M.S., North Carolina State College, 1922. Second year.

DERRICK, SAMUEL MELANCHTHON ..... Columbia, S. C.
A.B., Newberry College (S. C.), 1917. *Rural Sociology*
A.M., University of South Carolina, 1920. S.

DEW, JOHN HUGH ..... Alachua, Fla.
B.S., Davidson College, 1922. S. *Education*

DICKERT, HERMAN ALONZO ..... Newberry, S. C.
A.B., Newberry College (S. C.), 1923. S. *Chemistry*

DICKSON, GEORGE LEE ..... Greenwood, S. C.
B.S., The Citadel (S. C.), 1896. S. *History*

DUNCAN, GEORGE ALEXANDER ..... Ballymena, Ireland
A.B. and LL.B., Trinity College (Dublin), 1923. *Sociology, Rural Sociology*

DUNCAN, SARAH LOUISE ..... Greenwood, S. C.
A.B., Converse College (S. C.), 1920. Second year. *English*

DUPREE, BENJAMIN OWENS ..... Plymouth
A.B., 1921. S. *History, Education*

EARLE, WILTON ROBINSON ..... Greenville, S. C.
B.S., Furman University (S. C.), 1923. *Zoölogy, Chemistry*
M.S., 1924. Second year.

EASTHAM, ROBERT LAWSON ..... Red Springs
B.S., Virginia Military Institute, 1912. S. *Education*

EDWARDS, CLAYTON CARR ..... Sparta
A.B., 1922. Third year. *Mathematics, Education*

ELDRIDGE, JOHN GRADY ..... Bentonville
A.B., 1917. *Economics, Commerce*
A.M., 1923. S.

ELLIOTT, LUCILE MARSHALL ..... Chapel Hill
B.Ped., N. C. College for Women, 1912. S. *Special*

ELIOTT, PHILIP LOVIN ..... Mars Hill
A.B., Wake Forest College, 1919. Second year. *English*

EUDY, JOHN CLINTON ..... Cabarrus
A.B., Newberry College (S. C.), 1922. First year. *Education, Mathematics*

EUTSLER, ROLAND BYERLY ..... Ivy Depot, Va.
B.S., 1923. *Economics, Sociology*
M.S., 1924. Second year.

FEARRINGTON, JAMES CORNELIUS PARR ..... Winston-Salem
A.B., 1925. *Chemistry*

FINCH, HOWARD MONTAGUE ..... Merry Hill
A.B., Furman University (S. C.), 1922. S. *Education, French*

FISHER, MABEL CLAIRE ..... Andrews
A.B., Greensboro College, 1922. S. *Mathematics, Education*

FLOYD, JOHN HAMILTON ..... Kings Mountain
A.B., Wake Forest College, 1919. *Education*
A.M., *ibid.*, 1920. S.

FLOYD, LORTON HERBERT ..... Littleton
A.B., Furman University (S. C.), 1915. S. *Education, Economics*

FOSTER, FLOSSIE MARIE ..... Salisbury
A.B., North Carolina College for Women, 1921. S. *English*

FOSTER, SARAH LETTICE ..... Chesnee, S. C.
A.B., Winthrop College (S. C.), 1922. S. *Latin, English*

FOUST, LORA FRANCIS ..... Graham
A.B., Elon College, 1922. S. *Education, Sociology*

Frazier, Kitty Lee ..... Raleigh
A.B., 1924. First year. *French, Comparative Literature*

Freeman, Thomas Archie ..... Charlotte
A.B., Davidson College, 1922. S. *Education*

Fritz, Robert Leslie, Jr. ..... Hickory
A.B., Lenoir College, 1919. S. *Sociology, Education*

Fulton, Linnie Kate ..... Louisville, Miss.
A.B., Mississippi Woman's College, 1924. First year. *Sociology*

Funderburk, Roy ..... Monroe
A.B., Wake Forest College, 1909. S. *Education*

Furr, Carl Augustus ..... Stanfield
A.B., Loyola University (La.), 1921. S. *Education*

Garren, Gardner Marion ..... Raleigh
Ph.B., 1902. *Geology*
M.S., North Carolina State College, 1924. First year.

Gaston, Mary Esther ..... Belmont
A.B., North Carolina College for Women, 1919. S. *Sociology*

Giles, William Everett ..... Chapel Hill
A.B., Trinity College, 1916. *Chemistry, Engineering*
A.M., 1923. Fellow in Chemistry. Third year.

Glenn, William Darby, Jr. ..... Chapel Hill
A.B., 1921. *Psychology, Education*
A.M., 1922. Second year.

Goldiere, Augustin Victor ..... Thornton, R. I.
A.B., Dartmouth College (N. H.), 1919. S. *French*

Goodwin, Ernest Boyd ..... Calhoun Falls, S. C.
A.B., Wofford College (S. C.), 1921. S. *Education*

Gordner, Ida Caroline ..... Silverdale
A.B., North Carolina College for Women, 1919. S. *English, Education*

Graves, Nellie Hamilton ..... Carthage
A.B., 1924. First year. *Education*

Gray, Paul Milton ..... Chapel Hill
B.S., 1922. Second year. *Electrical Engineering, Physics*

Green, Clyde Lafayette ..... Maxton
B.S., Washington and Lee University (Va.), 1908. S. *Education*

Gwynn, William Wardlaw ..... Leaksville
A.B., 1924. First year. *History, Economics*

Hamilton, Thomas Tristram, Jr. ..... Hickory
A.B., Wake Forest College, 1923. S. *English, Education*

Hampton, William Oscar ..... Chapel Hill
B.S., Southeast Missouri Teachers' College, 1921. *Education, Psychology*
Fellow in Education. First year.

HARD, CHARLES FREDERICK ..... Birmingham, Ala.
A.B., University of the South (Tenn.), 1922. *English*
A.M., 1924. Second year.

HARMON, ANNIE OLIVIA ..... Pittsboro
A.B., Meridian College (Miss.), 1920. S. *English*

HARONIAN, FRANK JOHN ..... Chapel Hill
A.B., Mechitharists College (Constantinople), 1908. *French, Spanish*
A.M., Columbia University (N. Y.), 1921. Fourth year.

HARRIS, MILDRED ..... Raleigh
A.B., Wesleyan College (Ga.), 1922. S. *Education, English*

HARTSELL, EARL HORACE ..... Stanfield
A.B., 1924. S. *English*

HARRIS, CHARLES ROBERTS ..... Arden
B.S., 1921. *Chemistry, Geology*
M.S., Tulane University (La.), 1923. Second year.

HARVEY, JAMES VERNON ..... Clinton, Miss.
A.B., Mississippi College, 1923. Fellow in Botany. *Botany, Zoölogy*
Second year.

HATCHER, JOHN THOMAS ..... Rose Hill
A.B., 1914. *Education*
A.M., 1923. S.

HAUSER, IRA OTIS ..... Shoals
A.B., Elon College, 1922. S. *English*

HAWFIELD, SAMUEL GLENN ..... Monroe
A.B., Trinity College, 1915. S. *Education*

HAYDEN, NADEENE ..... Rowesville, S. C.
A.B., Columbia College (S. C.), 1924. S. *Education*

HAYES, MARGARET LOUISE ..... Burlington
A.B., North Carolina College for Women, 1919. S. *Education*

HEARNE, MOSES KILLEBREW ..... Macclesfield
B.S., 1924. First year. *Economics, Commerce*

HEFFNER, RAY LORENZO ..... Maiden
A.B., 1921. First year. *English*

HEILIG, ANNIE PRESTON ..... Norwood
A.B., North Carolina College for *Romance Languages, Education*
Women, 1920. S.

HEINSBERGER, MARGARET STUART ..... Wilmington
A.B., North Carolina College for Women, 1922. First year. *Psychology*

HELLAMS, MARTHA WESLEY ..... Waterloo, S. C.
A.B., Thornville College (S. C.), 1900. *English*
A.M., University of South Carolina, 1916. S.

HILL, VERNON ALLEN ..... Chapel Hill
A.B., 1924. First year. *Education*

HINSHAW, CLIFFORD REGINALD ..... Aulander
A.B., Guilford College, 1916. *Education, Sociology*
A.M., 1924. S.

HINSON, THERA EARL ..... Chapel Hill
B.S., 1921. Third year. *Economics*

HOLLAND, ANSEL CLAIR ..... Falcon
A.B., Presbyterian College of South Carolina, 1916. S. *Education*

HOLMES, HENRY MCCALL, JR. ..... Spartanburg, S. C.
B.S., The Citadel (S. C.), 1924. First year. *Civil Engineering*

HOLMES, RALPH WENDELL ..... Graham
A.B., 1914. S. *Education*

HONEYCUTT, MURRAY ..... La Grange
A.B., Wake Forest College, 1915. *Education*
A.M., *ibid.*, 1921. S.

HONEYCUTT, MRS. MURRAY ..... La Grange
A.B., Guilford College, 1918. S. *Latin, English*

HOWELL, CORNELIA ALMA ..... Mars Hill
A.B., Baylor College (Tex.), 1920. First year. *Spanish, History*

HOWELL, HARRY ..... Fayetteville
Ph.B., 1895. S. *Education*

HOYLE, COLUMBUS ALONZO ..... Carrboro
A.B., 1920. Second year. *English, Education*

HOYLE, VINTON ASBURY ..... Manteo
A.B., 1924. Fellow in Mathematics. First year. *Mathematics, Philosophy*

HUFF, HERBERT HENRY ..... Soudan, Va.
A.B., 1917. First year. *Rural Economics, Sociology*

HUFF, JOHN WASHINGTON ..... Mars Hill
A.B., Furman University (S. C.), 1911. S. *Latin, English*

HUMPHREYS, JOHN WESLEY ..... Wilson
A.B., Atlantic Christian College, 1924. S. *Romance Languages, Education*

HUNNICUTT, JAMES ALLEN ..... Carrboro
A.B., Furman University (S. C.), 1916. First year. *Sociology, History*

HURST, WILLIAM THOMAS ..... Manndale
A.B., Wake Forest College, 1909. S. *Education, Sociology*

IDOL, EUGENE DONALD ..... Pleasant Garden
A.B., Park College (Mo.), 1914. S. *Education*

INGOLD, WINIFRED LEE ..... Hickory
A.B., Lenoir College, 1917. S. *Education*

INGRAM, MITCHELL RAY ..... Taylorsville
A.B., 1913. *Education*
A.M., 1913. S.

IVES, CLAUDE LEON ..... Grifton
A.B., 1923. S. *Education*

JACKSON, BERTHA JANE ..... Birmingham, Ala.
B.S., University of Alabama, 1923. S. *English, Spanish*

JARMAN, LAWRENCE WOOTEN ..... Reidsville
A.B., 1920. S. *Education*

JEFFERSON, CLYDE BONNER ..... Washington
A.B., Atlantic Christian College, 1924. S. *Education, Sociology*

JEFFREY, MRS. CECELIA I. ..... Sloan, Iowa
Ph.B., Grinnell College (Ia.), 1909. First year. *Psychology*

JENKINS, EDGAR BRYAN ..... Nashville
A.B., 1920. First year. *English*

JENKINS, WILLIAM SUMNER ..... Lincolnton
A.B., 1924. Fellow in History and Government. First year. *History, Government*

JENNINGS, EARLE DEWITT ..... Charlotte
B.S., 1922. *Chemistry, Physics*
M.S., 1924. Second year.

JERNIGAN, ERNEST CASPER ..... Durham
A.B., 1923. S. *Education*

JOCHER, KATHERINE C. ..... Philadelphia, Pa.
A.B., Goucher College (Md.), 1922. *Sociology*
A.M., University of Pennsylvania, 1923. First year.

JOHNSON, A. THEODORE ..... Chapel Hill
A.B., Westminster College (Mo.), 1914. *English*
A.M., University of Virginia, 1917. Fourth year.

JOHNSON, GUY BENTON ..... Caddo Mills, Texas
A.B., Baylor University (Tex.), 1921. *Sociology, Psychology*
A.M., University of Chicago, 1922. First year.

JOHNSON, GUION GRIFFIS ..... Greenville, Texas
A.B., Baylor College (Tex.), 1921. *Sociology*
B.J., University of Missouri, 1922.

JOHNSON, MARGARET ELIZABETH ..... Greensboro
A.B., Greensboro College, 1922. S. *Romance Languages, English*

JOHNSTON, JOHN KNOX ..... Chester, S. C.
A.B., Presbyterian College of South Carolina, 1925. S. *History, Sociology*

JONES, MAY LOUISE ..... Chareston, S. C.
A.B., Columbia College (S. C.), 1919. S. *Education*

JONES, MARJORIE ROSS ..... Del Rio, Tenn.
A.B., Tusculum College (Tenn.), 1924. First year. *English*

KELLEY, ABNER WELLINGTON ..... Marengo, Ill.
A.B., Beloit College (Wis.), 1922. *English*
A.M., 1924. Fellow in English. Second year.

KELLY, BERNICE CHRISTIANA ..... Clayton
A.B., Meredith College, 1913. S. *English, History*

King, Katie Jewel ..... Mt. Olive
A.B., North Carolina College for Women, 1920. S. *Education, English*

Krauss, Harold Frederick ..... Lincolnton
A.B., Wittenberg College (O.), 1922. S. *Education*

Lane, Benjamin Benson ..... Chapel Hill
A.B., 1899. *English*
A.M., 1901. Second year.

Lassiter, George Washington ..... Windsor
A.B., Wake Forest College, 1916. S. *Education, English*

Lawrence, George Harold ..... Chapel Hill
A.B. Certificate, Columbia University (N. Y.), 1919. Second year. *Sociology*

Leftwich, Richard Sale ..... Goldsboro
A.B., Randolph-Macon College (Va.), 1918. S. *Education*

Lewis, Inez ..... Tabor
A.B., Columbia College (S. C.), 1921. S. *Latin, English*

Lewis, Mary Lizzie ..... Saxapahaw
A.B., Elon College, 1921. S. *Education*

Lineberry, Richard Arthur ..... Siler City
B.S., Guilford College, 1920. First year. *Chemistry, Physics*

Lingerfeldt, Thomas Clinton ..... Bessemer City
A.B., 1923. S. *Education*

Linker, William Murray, Jr. ..... Salisbury
A.B., 1923. Fellow in Psychology. First year. *Psychology*

Livermore, Mary Hoyland ..... Pates
A.B., Adelphi College (N. Y.), 1905. First year. *English*

Livingston, Azilee Florence ..... Prosperity, S. C.
A.B. Newberry College, (S. C.), 1922. S. *Mathematics*

Looper, Thomas Lee ..... Easley, S. C.
A.B., Furman University (S. C.), 1922. S. *History, Education*

Loy, William Duncan ..... *Shelby*
A.B., Elon College, 1915. S. *Education*

Lyon, Ralph Muse ..... Abbeville, S. C.
B.S., The Citadel (S. C.), 1923. Second year. *History, Education*

McCain, John Walker ..... Waxhaw
A.B., Newberry College (S. C.), 1923. S. *English*

McCain, Sabra Elgiva ..... Waxhaw
A.B., Chicora College (S. C.), 1919. S. *Education, English*

McCain, Walkup Kennard ..... Waxhaw
B.S., Davidson College, 1922. S. *Chemistry, Education*

McCall, Johnston Vannoy ..... Charlotte
A.B., 1924. First year. *Spanish, French*

MACCARTHY, GERALD RALEIGH ..... Chapel Hill
A.B., Cornell University (N. Y.), 1921. *Geology*
A.M., 1924. Third year.

MCCLAMROCH, ROLAND PRINCE ..... Chapel Hill
A.B., 1920. *English*
A.M., 1922. Fifth year.

MCCRACKEN, ADA LEE ..... Guilford College
A.B., Guilford College, 1921. S. *French*

MCDANIEL, MAJOR CYRUS ..... Newton, Miss.
A.B., Mississippi College, 1921. S. *Education, Sociology*

MCDOW, RUTH ..... Lancaster, S. C.
A.B., Winthrop College (S. C.), 1917. S. *English, History*

MCFARLAND, ALICE HARPER ..... West Durham
A.B., Boston University (Mass.), 1907. *English*
A.M., Vanderbilt University (Tenn.), 1911. S.

MCGALLIARD, JOHN CALVIN ..... Chapel Hill
A.B., 1924. First year. *English, Comparative Literature*

MCGILL, AILEEN GRAMLING ..... Lumberton
A.B., Columbia College (S. C.), 1918. First year. *Sociology, Education*

MCLAIN, CLARENCE REID ..... Hiddenite
A.B., Roanoke College (Va.), 1922. S. *Education*

MCLEAN, JOHN EDGAR ..... Spring Hope
A.B., Trinity College, 1915. S. *Education*

MACMILLAN, WILLIAM DOUGALD, III ..... Chapel Hill
A.B., 1918. *English*
A.M., 1920. Fourth year.

MCPHERSON, ELIZABETH GREGORY ..... Shiloh
A.B., 1923. S. *History*

MCREE, CARLOS HOBSON ..... Oakboro
A.B., Lenoir College, 1920. S. *Education, Sociology*

MANESS, LEVI RUFUS ..... Elizabethtown
A.B., Trinity College, 1923. S. *Education, Mathematics*

MANNING, HATTIE CATHERINE ..... Catherine Lake
A.B., 1924. S. *English*

MARSHBURN, ROBERT FRANKLIN ..... Wallace
A.B., 1922. S. *Education, English*

MARTIN, HERMON WILKES ..... Atlanta, Ga.
A.B., Emory University (Ga.), 1918. *Psychology*
A.M., 1924. Fellow in Psychology. Second year.

MAYO, AMY OVERTON ..... Wilson
A.B., North Carolina College for Women, 1919. S. *Education, History*

MEARES, KATE DE ROSSET ..... Ridgeway, S. C.
A.B., 1920. S. *Latin, History*

Messick, John Decatur ..... South Creek
Ph.B., Elon College, 1922. S. *English*

Miller, Emery Clyde ..... Hickory
A.B., Lenoir College, 1919. S. *Sociology, Education*

Moore, Coyle Ellis ..... Waterloo, S. C.
B.S., The Citadel (S. C.), 1920. Fellow in Sociology. First year. *Sociology*

Moore, Joseph Palmer ..... Mebane
B.S., Davidson College, 1911. S. *Education*

Morgan, Francis Grover ..... Hickory
A.B., Lenoir College, 1909. *Education, Psychology*
A.M., University of South Carolina, 1913. S.

Morrison, Roy ..... Linden
A.B., Davidson College, 1916. S. *Education*

Morse, Mildred ..... Charlotte
A.B., 1923. *Chemistry*
A.M., 1924. S.

Morton, Margaret Shannon ..... Clarksville, Va.
B.S., State Teachers' College (Va.), 1919. S. *English*

Mosteller, David Calvin ..... Reepsville
A.B., Lenoir College, 1922. S. *Education, Sociology*

Murphy, George Moseley ..... Wilmington
B.S., 1924. Fellow in Chemistry. First year. *Chemistry, Mathematics*

Muthiah, S. N. A. Alagappa ..... Madras, India
B.S., Clemson College (S. C.), 1923. Second year. *Commerce, Economics*

Newby, George Edgar ..... Hertford
A.B., 1924. Fellow in Economics and Commerce. *Economics, Commerce*
First year.

Norton, Clarence Clifford ..... Chapel Hill
B.S., Millsaps College (Miss.), 1919. *History, Sociology*
M.A., Emory University (Ga.), 1920. Second year.

Olive, Eugene Irving ..... Chapel Hill
A.B., Wake Forest College, 1910. *Sociology*
Th.M., Southern Baptist Theological Seminary (Ky.), 1918. First year.

Olsen, William ..... Chapel Hill
A.B., Cornell University (N. Y.), 1923. Second year. *English*

Owen, Ruth ..... Townsville
A.B., Meredith College, 1916. S. *Education*

Padgett, James Absalom ..... Chadbourn
A.B., Maryville College (Tenn.), 1910. *History*
A.M., University of Oklahoma, 1914. S.

Padgett, John Bee ..... Lake Butler, Fla.
B.S., The Citadel (S. C.), 1924. Fellow in Civil
Engineering. First year. *Civil Engineering*

Page, Ernest Benjamin ..... Bethel
A.B., Elon College, 1918. S. *English, Education*

PAIT, IP CLARK ..... Bladenboro
A.B., Wake Forest College, 1923. S. *English, Education*

PARDUE, HENRY FLETCHER ..... Boonville
A.B., George Peabody College for Teachers (Tenn.), 1907. S. *Education*

PASCHALL, BERTHA ELLINGTON ..... Ridgeway
A.B., Elon College, 1921. S. *Education, History*

PATTON, JAMES WELCH ..... Walter Hill, Tenn.
A.B., Vanderbilt University (Tenn.), 1924. Fellow in History and Government. First year. *Government, History*

PEELE, AGNES LEE ..... Wilson
A.B., Atlantic Christian College, 1918. S. *Education, Romance Languages*

PENNEY, JAMES THEOPHILUS ..... Chapel Hill
A.B., 1921. Fellow in Zoology. Second year. *Zoölogy, Botany*

PERINE, KEBLE BARNUM ..... Chapel Hill
B.S., Massachusetts Institute of Technology, 1922. S. *Chemistry, Physics*

PETERSON, OSCAR JAMES ..... Clinton
A.B., Wake Forest College, 1892. S. *Education*

PETTIGREW, RICHARD CAMPBELL ..... Florence, S. C.
A.B., Furman University (S. C.), 1925. First year. *English*

PHILLIPS, RUPERT ANDREW ..... Macclesfield
A.B., Atlantic Christian College, 1920. S. *Education*

PIERCE, MAUDE ..... Hallsboro
A.B., North Carolina College for Women, 1921. S. *History*

PIGG, CLARA MOZELLE ..... Madison
A.B., Meredith College, 1907. S. *Education*

PITTS, JOEL ANDERSON ..... Creedmoor
A.B., Trinity College, 1906. S. *Education*

PLUMB, FREDERIC HENRY ..... Newport
B.S., Massachusetts Agricultural College, 1902. S. *Education*

POTTER, ROBERT RUSSELL ..... Chapel Hill
A.B., University of Denver (Colo.), 1921. *English*
A.M., University of Colorado, 1922. Third year.

POWELL, CHARLES PERCY ..... Winston-Salem
A.B., 1923. Second year. *History*

PRESNELL, WILMER CARR ..... Ashboro
B.S., 1924. S. *Economics*

PRITCHARD, VERA ..... Chapel Hill
A.B., 1920. S. *Education*

PRIVETTE, WILLIAM GARLAND ..... Raleigh
A.B., Wake Forest College, 1912. First year. *Education*

RANDOLPH, ARTHUR GRIER ..... Hendersonville
A.B., Erskine College (S. C.), 1899. S. *Education*

Ranson, Murphy Dale ..... Huntersville
B.S., 1924. First year. *Economics*

Rawl, Estelle ..... Columbia, S. C.
A.B., Winthrop College (S. C.), 1912. S. *Education*

Reap, Charles Augustus ..... Albemarle
A.B., Trinity College, 1917. *Education*
A.M., Trinity College, 1918. S.

Redfearn, William Alexander ..... Wingate
B.S., 1921. S. *Education*

Reeves, Charles Gordon ..... Nathans Creek
A.B., 1924. Fellow in Economics and Commerce. First year. *Economics*

Rembert, Henry Linwood ..... Durham
A.B., University of South Carolina, 1909. S. *Education*

Rhodes, Guy Blaisdell ..... Columbia
A.B., Wake Forest College, 1920. S. *Education, Sociology*

Rhyne, Jennings Jefferson ..... Bessemer City
A.B., 1919. First year. *Sociology, Education*

Riden, Clifford Winslow ..... Hiddenite
A.B., University of Tennessee, 1922. S. *Education*

Rogers, Elizabeth Still ..... Wilson
B.Ped., North Carolina College for Women, 1916. S. *Mathematics, Education*

Rogers, George Oroon ..... Whiteville
A.B., 1909. S. *Education*

Rogers, Lois ..... Tyler, Texas
A.B., Queens College, 1924. First year. *English, Education*

Rogers, Rollin William ..... Cohoes, N. Y.
A.B., College of the Pacific (Calif.), 1922. S. *History, Government*

Rogers, William White ..... Chapel Hill
A.B., 1912. *Psychology*
A.M., 1924. Second year.

Roland, Herrick Milton ..... Scotland Neck
A.B., Wake Forest College, 1920. S. *Education*

Rowland, Clifford Carlysle ..... Dunn
A.B., 1924. First year. *Economics, Commerce*

Russ, Christopher Cleveland ..... Cerro Gordo
A.B., Wake Forest College, 1917. S. *Education, Sociology*

Russell, Dean Hamilton ..... Anderson, S. C.
B.S., The Citadel (S. C.), 1923. S. *Chemistry*

Safford, Fred Landis ..... Woodrow
A.B., Trinity College, 1915. S. *Education*

Scaife, Glover Conyers ..... Hickory
A.B., Furman University (S. C.), 1903. S. *Education*

SCHAFF, WALTER RAY ..... Hickory
A.B., Lenoir College, 1921. S. *Education, Rural Sociology*

SCHOLZ, HERBERT, JR. ..... Macon
A.B., Elon College, 1923. S. *Mathematics, Chemistry*

SCOTT, BENAJAH, JR. ..... Lucama
A.B., Trinity College, 1922. S. *Education*

SEITZ, EUBERT VANCE ..... Newton
A.B., Lenoir College, 1922. S. *Education, Sociology*

SESSUMS, ALEXANDER CLEVELAND ..... New Orleans, La.
A.B., University of the South (Tenn.), 1922. Second year. *English*

SETZER, IVA PEARL ..... Hickory
A.B., Lenoir College, 1910. Second year. *English*

SHEPARD, FREDERICK CARLYLE ..... Wilmington
A.B., 1921. First year. *Education*

SHIELDS, JOHN MONTGOMERY ..... Enfield
A.B., 1911. S. *Education, Sociology*

SHINE, WESLEY HILL ..... Chapel Hill
A.B., 1921. First year. *English*

SIMONS, MARIAN G. ..... Royal Oak, Mich.
A.B., Goucher College (Md.), 1924. First year. *Sociology*

SIMMONS, WALTER LEE, JR. ..... Tarboro
A.B., Washington and Lee University (Va.), 1924. S. *English*

SINGLETON, GARY HIGGINS ..... Westminster, S. C.
B.S., Clemson College (S. C.), 1919. *Rural Economics*
M.S., Rutgers College (N. J.), 1924. First year.

SMITH, ALLEN ERNEST ..... Hope Mills
B.S., North Carolina State College, 1918. S. *Education*

SMITH, CECIL CLINE ..... Dunn
A.B., 1923. S. *Education*

SMITH, ELIZABETH GIBSON ..... Bennettsville, S. C.
B.S., Converse College (S. C.), 1922. First year. *Sociology, Rural Sociology*

SMITH, JOHN LEROY ..... Chapel Hill
A.B., 1917. *French, Spanish*
A.M., 1924. Second year.

SMITHEY, SHERMAN BRYAN ..... Chapel Hill
A.B., 1917. Second year. *Mathematics*

SNODDY, CHARLES EDWIN ..... Salemburg
A.B., 1917. S. *English*

SPIVEY, GAYNELL CALLAWAY ..... Winston-Salem
A.B., Greensboro College, 1917. S. *English*

STABLER, LEWIS BELLINGER ..... North, S. C.
A.B., Wofford College (S. C.), 1917. Fellow in Romance Languages. First year. *Romance Languages*

Stamper, Mable ..... Winston-Salem
A.B., North Carolina College for Women, 1922. S. *Education*

Stanford, Elizabeth Graves ..... Teer
A.B., North Carolina College for Women, 1922. S. *Education, History*

Stephenson, Irving Joseph ..... Angier
A.B., 1923. S. *Mathematics*

Stiles, Kelly James ..... Bryson City
A.B., Wake Forest College, 1924. S. *English*

Stine, Glenn Ralph ..... Newton
A.B., Lenoir College, 1922. S. *Education, Sociology*

Stone, Orlando ..... Apex
A.B., University of Virginia, 1925. First year. *Sociology, Education*

Stoudemire, Sterling Aubrey ..... Spencer
A.B., 1923. *Spanish*
A.M., 1924. Second year.

Stout, Agnes ..... Burlington
A.B., North Carolina College for Women, 1923. *English*
A.M., *ibid.*, 1924. First year.

Stout, Wilbur White ..... Burlington
A.B., 1921. *English*
A.M., 1922. Fellow in English. Fourth year.

Stroup, Clarence Crawford ..... Clover, S. C.
A.B., Erskine College (S. C.), 1918. S. *Education, Sociology*

Sturdivant, Joanna Farrell ..... Carrboro
A.B., Carson-Newman College (Tenn.), 1909. *Sociology*
A.M., 1924. Second year.

Sturgeon, Angie Helen ..... Sterling, Kansas
A.B., Sterling College (Kans.), 1918. *Education*
A.M., Smith College (Mass.), 1923. S.

Sullivan, Mary Clara ..... Lincolnton
A.B., Lenoir-Rhyne College, 1924. S. *English*

Talley, Marguerite Embree ..... Newport, Tenn.
A.B., Carson-Newman College (Tenn.), 1924. First year. *English*

Tatum, Mrs. Roy C. ..... Statesville
A.B., Meredith College, 1915. S. *History, Education*

Taylor, James Spottiswood ..... Danbury
B.S., Guilford College, 1923. *French*
M.A., Haverford College (Pa.), 1924. S.

Thomas, Henderson Lee ..... Dover
A.B., Elon College, 1917. S. *Education, Sociology*

Thompson, Edgar Tristram ..... Dillon, S. C.
A.B., University of South Carolina, 1922. *Rural Social-Economics*
A.M., University of Missouri, 1924. First year.

THOMPSON, FRANK THORNBER ..... Chapel Hill
A.B., 1921. *English*
A.M., 1923. Third year.

THOMPSON, SAMUEL HUNTER ..... Jonesboro, Tenn.
A.B., Lincoln Memorial University (Tenn.), 1921. *Education, Economics*
A.M., 1923. S.

THORNBURG, J. LEWIS ..... High Shoals
A.B., Lenoir College, 1920. *Sociology*
A.M., University of South Carolina, 1922. First year.

TICKLE, JULIUS DEXTER ..... Elon College
A.B., Lenoir College, 1923. S. *Education*

TIGNER, FANNIE MCGEE ..... Dahlonega, Ga.
A.B., University of Georgia, 1919. S. *History, English*

TILLINGHAST, EDWARD STAURBURY ..... Spartanburg, S. C.
A.B., Wofford College (S. C.), 1922. First year. *Chemistry, Physics*

TOWNSEND, RUTH FORD ..... Fair Bluff
A.B., Coker College (S. C.), 1921. S. *English, French*

TRABUE, EMMA SMALL ..... Chapel Hill
A.B., De Pauw University (Ind.), 1911. First year. *English*

TREMAIN, RAWLEIGH LEWIS ..... High Point
A.B., Guilford College, 1921. S. *Education, History*

TREXLER, ROBERT LEE ..... Salisbury
A.B., Roanoke College (Va.), 1911. S. *Education*

TRUSSELL, BRANDON ..... Boyd, Texas
A.B., University of Texas, 1913. *Rural Social-Economics, Sociology*
A.M., *ibid.*, 1922. First year.

TYLER, WILLIAM HERBERT ..... Goldston
A.B., Wake Forest College, 1902. *Sociology, Philosophy*
A.M., Wake Forest College, 1909. First year.

UNDERWOOD, JINSIE ..... Waynesville
A.B., North Carolina College for Women, 1922. S. *History, Sociology*

WAGER, PAUL WOODFORD ..... Hector, N. Y.
B.S., Hobart College (N. Y.), 1917. *Rural Social-Economics, Sociology*
A.M., Haverford College (Pa.), 1920. First year.

WALKER, CARL HAMPTON ..... Coinjock
A.B., 1920. *Geology*
A.M., 1923. S.

WALKER, THOMAS TIPTON ..... Atlanta, Ga.
B.S., Emory University (Ga.), 1924. Fellow in Chemistry. *Chemistry*
First year.

WARD, LINNIE MARIE ..... Greensboro
A.B., Greensboro College, 1913. *Latin, English*
A.M., 1920. S.

Warfel, Harry Redcay ..... Lewisburg, Pa.
A.B., Bucknell University (Pa.), 1920. *English*
A.M., *ibid.*, 1922.
A.M., Columbia University, 1924. First year.

Waters, Fred Monroe ..... Selma
A.B., Wabash College (Ind.), 1915. S. *Education, Sociology*

Wearn, Cornelia ..... Charlotte
A.B., Queens College, 1924. First year. *English*

Weatherly, Carl Holmes ..... Kernersville
B.S., Davidson College, 1905. S. *Education*

Webb, William Stanford ..... Bell Buckle, Tenn.
A.B., Vanderbilt University (Tenn.), 1920. Second year. *English*

Webster, Margaret Cornelia ..... Fort Worth, Texas
A.B., Colorado Teachers' College, 1922. S. *Romance Languages*

Webster, Maude Martha ..... Stokesdale
A.B., Greensboro College, 1923. S. *Geology, Chemistry*

Welch, Helen Mae ..... Hertford
A.B., Sweet Briar College (Va.), 1923. S. *Education*

Weldon, Nathaniel Warren ..... Stovall
B.S., North Carolina State College, 1917. S. *Education*

Wertz, Marguerite Sibyl ..... Newberry, S. C.
A.B., Newberry College (S. C.), 1922. S. *Latin, English*

Whetstone, Mollie Elizabeth ..... Rowesville, S. C.
A.B., Columbia College (S. C.), 1924. S. *Education*

Whiteside, James Sidney ..... Edgemoor, S. C.
A.B., Davidson College, 1923. S. *Education*

Whitley, Daniel P. ..... Albemarle
A.B., Lenoir College, 1914. S. *Education*

Whitley, Ona Ruth ..... Unionville
A.B., 1924. S. *Education*

Williams, Miriam Aline ..... Union, S. C.
A.B., Winthrop College (S. C.), 1919. S. *History, English*

Williams, John Milton ..... Chapel Hill
A.B., Oxford University (England), 1921. *English*
A.M., Harvard University (Mass.), 1923. First year.

Wilson, Ossie Williams ..... Raleigh
A.B., Wake Forest College, 1922. S. *Romance Languages*

Wilson, Samuel Branson ..... Wallace
A.B., Wake Forest College, 1901. S. *Education*

Windell, Gary Tillman ..... Fort Mill, S. C.
A.B., Furman University (S. C.), 1919. S. *Education, Sociology*

Womack, Anderson William ..... Winston-Salem
A.B., 1923. First year. *Botany*

WOODHOUSE, WILLIAM WALTON ..... White Oak
A.B., Wake Forest College, 1899. S. *Education*

WOODIE, WILLIAM LAWTON ..... Furches
A.B., Elon College, 1923. S. *Education*

WOODARD, CLEMENT MANLY ..... Whartonsville
A.B., 1918. S. *French, Education*

WRIGHT, LOUIS BOOKER ..... Greenwood, S. C.
A.B., Wofford College (S. C.), 1920. *English*
A.M., 1924. Fellow in English. Second year.

YODER, EDWIN MOSES ..... Hickory
A.B., Lenoir College, 1922. S. *Education*

YOUNT, LILY MAGDALENE ..... Gold Hill
A.B., Lenoir-Rhyne College, 1924. S. *French, English*

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